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AMERICAN PHARMACEUTICAL ASSOCIATION.

THE thirty-eighth annual meeting convened at Old Point Comfort, Va., on Monday, September 8th, 1890, at 3 o'clock P.M., President Karl Simon presiding.

Mr. T. Roberts Baker made an address of welcome on behalf of the Virginia State Pharm. Association, to which Mr. W. M. Alexander made a suitable reply.

The president then called upon the Committee of Arrangements to report regarding the proposed sessions and entertainments. A report having been rendered, the president delivered his address. He expressed the deep regret of the Association at the death of its elected president, Emlen Painter, alluding in eloquent words to his personal worth and earnest labors in behalf of the welfare of the profession to which he belonged. He suggested that a committee be appointed to draw up suitable resolutions expressive of sympathy with the family of the deceased.

Commenting on the action taken by the Pharmacopœial Convention in regard to the metric system, he observed that it would no doubt give rise to much unfavorable criticism by druggists who have been too long wedded to the old system to be wholly separated from it. But, no doubt, "the requirements of science demand the change; it is more convenient than the old, and all that is necessary for the pharmacist to do is to provide himself with sets of metric weights and measures for his prescription case, and the change can be easily made."

It had been expected that a great many of the newer synthetic remedies and compounds would be accepted and introduced into the new Pharmacopœia. The manufacture of some of these articles being under patented processes justifies the action of the convention in excluding them, to a certain extent, but there are so many of these compounds which have a very important hold upon the medical profession that it is to be regretted that they cannot be incorporated in the new Pharmacopœia. With the majority of pharmacists this would be the only source of information in regard to these preparations, and it is to be hoped that the committee will find a way out of the difficulty, perhaps by adding a supplement on the subject.

With regard to the committee appointed two years ago to visit the American Medical Association, some information may be expected, in their report on the action taken by that body, which would be of great interest to the pharmacists of the country, who are anxious to know the attitude taken by the medical profession towards them. Much is to be expected from the new section on Materia Medica and Pharmacy which has been established by the American Medical Association.

At the next convention of that Association, at Washington in May next, the Am. Pharmaceutical Assoc. would be represented by a strong committee, so as to be thoroughly informed on subjects coming up for discussion. These subjects would not be so much questions of trade pharmacy, or counter-prescribing by druggists, etc., as the desirability of having uniformity in medicines and improvements in quality. One of the objects of the union should be to make the U. S. Pharmacopœia and the National Formulary the national authorities for the dispensing of medicines. The subject of the indorsement of proprietary preparations by medical men, afterwards to be used by shrewd manufacturers to push such preparations in the well-known "cure-all" manner, should also receive attention, since pharmacists often had more reliable information on the monopolistic character of such preparations than the physician.

The Section on Legislation will evolve some plan in the near future which will insure more uniformity in our pharmaceutical laws as well as in the curriculum followed by the various colleges of pharmacy throughout the United States. It has been reported that the interchange of certificates of one State Board with another would be very difficult. At a convention of the secretaries of the different State Boards which would be held at this meeting, this matter would be carefully considered.

The recurring and vexatious matter of procuring suitable apprentices would also receive attention from this section.

The Commercial Section has many important questions before it. It would be of interest to have a report from this section on the co-operative movement, which has existed for some time in Chicago and some other large cities. It would be of interest to druggists in other large cities who have to contend with the grievous evil of cutting prices. The purely trade branches of pharmacy are more and more drifting into the hands of the general dealer, and that the drug stores are not increasing in the same ratio as formerly in the larger cities is the best proof that there is no money in it. Here a rigid system of apprenticeship would come into play, as it would shut the door to many a person who wants to enter the profession for the mere dollars he thinks are in it. It is these uneducated and incompetent persons who are injuring the drug business. The Association has an immense field to draw on for support, and considering that there are over 30,000 drug stores in the United States, and, on an average, two qualified pharmacists to each, the Association has a comparatively small number among its membership. This fact is due, in a great measure, to the lack of proper information, on the part of pharmacists, as regards the objects of the Association. The State Associations should therefore work vigorously to spread a knowledge of the objects of the national organization.

A suggestion had been made that every president of a State Association be made a vice-president of the National Association. Such an arrangement would enlist the interest of some thirty-odd presidents of such associations, and bring them to the annual meetings.

Ex-President Alexander had offered some valuable suggestions on the question of finance, on the strength of which a committee had been appointed to formulate a system of financiering which would take care of all future contingencies.

A communication was received during the past year from the Montpellier Academy, France, concerning the celebration of its sixth centennial, and inviting the Association to send delegates to participate in it, to which a reply had been sent, expressing regret at our inability to do so, and extending suitable congratulations.

A notice had been given, at the last meeting, of an amendment to the by-laws which would amalgamate the sections on Pharmaceutical Education and Pharmaceutical Legislation, and which would be considered at this meeting.

The president concluded his address by thanking Messrs. Ebert, Hallberg, and Bedford, and Secretary Maisch, for the many acts of kindness and valuable assistance rendered him in the performance of his duties.

On motion of Mr. Ebert, the president's annual address was received, and ordered to be referred to a committee of three, to be appointed by the chair, for consideration and report on the suggestions contained therein.

Messrs. Dohme, of Baltimore, Md., Gordon, of Ohio, and Ebert, of Illinois, were thereupon appointed as such committee.

Mr. G. W. Kennedy, Secretary of the Council, read a list of seventy-eight applicants for membership. On motion, they were invited to join the Association.

The Committee on the Revision of the Pharmacopœia, and the Committee to Visit the National Wholesale Druggists' Association, announced that they had no formal report to present.

The same statement was made by the Committee on the National Formulary.

The question of appointing a Committee on Nominations being brought up, attention was directed by the president to the provision of the by-laws according to which each State (not State Association) was entitled to two representatives on the committee, which would involve a preliminary agreement of all members present from any one State, as to the two members who should represent the State on the Nominating Committee.

Before the roll was called Mr. Alexander gave notice of an amendment to the by-laws (chap. ix., art. xi., sec. 7), in which the words "who are not delegates"—in the passage reading "in addition to which he shall appoint five members who are not delegates, to act with the committee"—are to be dropped.

The Nominating Committee was then appointed from the names presented by the several States (through the united action of the members from each State).

On motion of Mr. Sheppard, the Nominating Committee was authorized to fill vacancies in this way, that each State could nominate a substitute for any member who was unable to serve.

The president next directed the attention of the Association to the fact that this was the first time in its history when its presiding officer died during his term of office.

Prof. Bedford thereupon gave some details regarding Prof. Painter's lamented death and the causes leading thereto. He also emphasized the loss which the profession has incurred through Prof. Painter's death, and truthfully characterized the strong individuality of the deceased.

Ex-President Alexander, who had become acquainted with the deceased more in a professional than in a social way, and who had become strongly impressed with his firm character and zeal for all that is true and noble, likewise added his testimony to the universal verdict regarding the deceased.

Other members, who had had much opportunity to cul-

tivate Prof. Painter's acquaintance or to enjoy his friendship, likewise made suitable remarks—among them particularly Prof. Remington, who had been a classmate of the deceased and had graduated with him.

Prof. Bedford announced that a crayon portrait of the deceased was expected to arrive at the present place of meeting.

The treasurer next presented his report, which showed a total income, from all sources, of $10,511.39, and a total expenditure of $6,370.82, leaving a balance on hand, on July 1st, 1890, of $4,140.57.

Prof. Remington then read the report of the Committee appointed to visit the American Medical Association. The main feature of this was the announcement that the Association had, at its last meeting in Nashville, established a section on Materia Medica and Pharmacy, with the same privileges as other sections, the chairman being Dr. C. V. Woodbury, of Philadelphia.

A vote of thanks was tendered to the committee.

On motion of Mr. Hallberg, the present committee, consisting of five members, was continued and instructed to represent this Association at the next meeting of the Medical Association.

A discussion then arose as to whether State Associations were intended to be invited to attend these meetings, in addition to the American Pharmaceutical Association as a national body. Mr. Hallberg announced that he had received information on the strength of which he notified the State Associations that they would be admitted.

Mr. Ebert gave formal notice of an amendment to the constitution (art. iii.), by inserting after the words "permanent secretary" the words "and assistant secretary." This amendment, under the rules, to lie over for one year.

On motion of Prof. Whelpley, the privileges of the floor were extended to those members of the Committee of Revision of the Pharmacopœia—which was then holding sessions at the same place of meeting—who were not members of the Association.

The meeting then adjourned.

Second General Session, Tuesday Morning, September 9th.

The convention was called to order at 11 A.M. by President Simon. The reading of the minutes, by the secretary, of the last session having been heard, and, on motion, accepted and approved, the report of the Nominating Committee was presented by Mr. Alexander, the chairman, as follows :

President—A. B. Taylor, Philadelphia, Pa.
First Vice-President—A. B. Stevens, Ann Arbor, Mich.
Second Vice-President—Charles E. Dohme, Baltimore, Md.
Third Vice-President—J. M. Good, St. Louis, Mo.
Permanent Secretary—J. M. Maisch, Philadelphia, Pa.
Treasurer—S. A. D. Sheppard, Boston, Mass.
Members of Council—P. C. Candidus, Mobile, Ala. ; C. F. Goodman, Omaha, Neb. ; H. M. Whelpley, St. Louis, Mo.
Reporter on the Progress of Pharmacy—C. Louis Diehl, Louisville, Ky.

On motion the report was approved, and the secretary instructed to cast an affirmative ballot for the election of the officers named.

The secretary then read the report of the Committee on Credentials, which, on motion, was approved and accepted.

Also the minutes of the Publication Committee, which were duly accepted.

The secretary then read a list of thirty-five names of proposed members, who, on motion, were invited to join the Association.

Mr. Sheppard moved that the amendment to the by-laws offered by Mr. Alexander, striking out the words "who are not delegates" from sec. 7 of art. xi., ch. ix. of the by-laws, be adopted. (Seconded and carried.)

Mr. Ebert gave notice of an amendment to art. ii., ch. viii. of the by-laws, inserting on line five thereof, after the word "paying," the words "an initiation fee of five dollars," and then continuing, "and the annual contribution for the current year."

On behalf of the Committee on Prize Papers, Prof. Patch reported as follows :

In regard to the Ebert prize for the best paper submitted, a question has arisen in our minds as to what the prize was to be given for. Assuming, however, that it was the intention of the originator of the prize that it should be given every year to the author of that paper which was the most original in investigation and opened up the newest field of discovery, your committee is unanimous in awarding the prize to the author of "The Coloring Principle of Flowers," Mr. W. T. Wenzell, of San Francisco, Cal.

On motion the report was adopted.

Mr. Eliel moved that the chair appoint a committee of five on the time and place of next meeting, which was seconded and carried, and the chair appointed Messrs. Goodman, Alexander, Whitney, Sheppard, and Heinitsh as such committee.

The report of the Committee on the President's Address was presented, as follows :

"Your committee, to whom was referred the president's address, respectfully report as follows :

"1. We recommend that a committee of five be appointed to draw up suitable resolutions in reference to the death of our late president, Mr. Emlen Painter.

"2. That the sections of Pharmaceutical Education and Pharmaceutical Legislation be combined in one.

"3. We approve of the meeting of our Committee on Legislation with a conference of the State secretaries to form some plan for legislation whereby the certificates of State Boards of Pharmacy may be made interchangeable.

"4. We do not approve of the plan proposed in the address in reference to electing presidents of State Pharmaceutical Associations vice-presidents of this Association. This would require a complete change in the laws that govern our organization."

On motion the report was taken up by sections.

On motion of Mr. Hallberg the first section was amended to provide that a phototype of the late president be included in the report of the proceedings of this year's meeting.

The section was then adopted.

The second, third, and fourth sections were also, on motion, adopted.

The chair appointed as a Committee on Resolutions on the death of the late president, Messrs. Bedford, Remington, Gordon, Alexander, and Ebert.

Mr. Ebert remarked, at this point, that he thought, pending the return of the report on time and place of meeting, a discussion would be of value on the question of finance. He thought the initiation fee should be increased in order to enhance the funds of the Association, and that its decrease some years ago had not been a wise move. He therefore made a motion that the Association's admission fee be increased to five dollars. (The motion was seconded.)

Mr. Thompson stated that, as the originator of the decrease in the admission fee, he would explain that it was done with the idea that a higher fee might keep many prospective members from joining the Association; that it was better to have the co-operation of one hundred men at two dollars than fifty at four dollars. He did not think, however, that it was right to charge any admission fee whatever.

Mr. K. King said there was no necessity for devising means of increasing the finances of the Association. He had lately discovered—though he might have known it before—that, according to the by-laws, there was a life-membership fund which, up to this time, has not been used, but allowed to accumulate, and it was also stated that it should be used for current expenses when necessary. He was in favor of reducing the admission fee of the Association to one dollar a year, if by so doing the strength of membership could be increased.

Prof. Whelpley said it hardly seemed just that any pharmacist could join the Association and take an equal interest in the property owned by it, merely by signing the constitution, which would place him on an equal footing with the oldest member. Let those who come in later pay for the privilege. He opposed any reduction in the fee.

Mr. Ebert said he merely brought the matter up for an informal discussion. When put to a vote, if the motion were carried he would make a formal motion amending the by-laws in the manner suggested. If lost, he would not press the matter.

The question was then put to a vote, and was lost.

Mr. Goodman presented the report of the committee on time and place of the next annual meeting, as follows:

"Your committee on the time and place of the next meeting respectfully report that New Orleans as the place has been selected, and the second Monday in May as the time for holding same; and also present a minority report recommending St. Louis, and the time the second Monday in May."

The report elicited considerable discussion, some members speaking in favor of St. Louis. But, in view of the fact that the extreme South had not before been visited, the majority report was finally adopted.

The secretary read a communication from the secretary of the Virginia State Pharmaceutical Association, in session at the Hygeia Hotel, inviting members of the American Pharmaceutical Association to any of its sessions, with all the privileges of the floor, which on motion was accepted, and a vote of thanks tendered the Virginia Association.

The time of holding the meeting was then again brought forward for discussion, Mr. Washburn pointing out that some State Associations held their meetings in May, and recommending to postpone it to October.

Mr. Finlay, of New Orleans, stated that this would be an improper time to convene in that city, and advised to select any time before the 1st of June.

Prof. Remington then moved to select the first instead of the second Monday in May, which was agreed to.

Third General Session, Tuesday Afternoon, September 9th.

The convention was called to order at 3 P.M.

The minutes of the last session were read and approved.

The secretary read an invitation from the Virginia State Pharmaceutical Association, inviting the members of the American Pharmaceutical Association to be present at a lecture to be delivered before that body by Prof. Remington on the Metric System, at 11 A.M. Wednesday, September 10th.

On motion the invitation was accepted and referred to the Committee on Scientific Papers.

The convention then adjourned its general session to give place to the Section on Commercial Interests.

Fourth General Session, Wednesday Morning, September 10th.

The convention was called to order at 10 A.M.

The permanent secretary read the minutes of the last general session, which on motion were approved.

Messages from the Chicago College of Pharmacy and the Kings County Pharmaceutical Society were received and duly acknowledged.

The secretary of the Council presented sixteen names of proposed new members, who on motion were invited to join the Association.

On motion the general session adjourned to give place to the Section on Scientific Papers.

SECTION ON SCIENTIFIC PAPERS.

First Session, Wednesday Morning, September 10th.—The chairman, Prof. Whelpley, on calling the section to order, requested Prof. Stevens to act as secretary pro tem., the secretary being absent.

An invitation was extended to the Virginia State Pharmaceutical Association to attend the session.

The chairman then delivered his annual address. He spoke of the practical value of the section, and hoped that no paper would be referred without discussion.

He had discovered that most authors who wanted to present papers preferred to have them printed before the meeting. It was a good plan, as better copy was produced in the reports. If that could not be done, he recommended that papers be typewritten.

A request which had been made to authors of papers to prepare a synopsis in advance had not met with a general response. In presenting papers to the Association, the reading of such a synopsis not only saved time, but gave a better opportunity for discussion.

Some contributors had also failed to understand that a paper becomes the property of the Association as soon as it is received by the section, and that the author loses the sole control of its publication elsewhere. Another point is the presentation of papers which have been previously read and accepted at State pharmaceutical associations. He was aware that a subject could be discussed at more than one association, but papers which had already been offered at another association should not be presented to the American Pharmaceutical Association. All papers admitted to this section must be especially prepared for the Association.

Last year a recommendation had been made that questions be presented to the A. P. A. for discussion at this section, and it resulted in only two being offered.

He suggested that a committee be appointed early in the opening of the session to solicit queries from members present at the convention, and report the same to the chairman of the Section on Scientific Papers within thirty days after the adjournment of the convention.

Prof. Remington then moved that a committee be appointed to report on the address of the chairman, which was seconded and carried.

The chair appointed on the committee Messrs. Remington, Uhlich, and Sheppard.

The nomination (but not election) of chairman and secretary for the ensuing year was next taken up, the election to take place after the opening of the next session, when further nominations could be made if desirable.

Prof. Remington nominated as chairman Prof. E. L. Patch, of Boston. (Seconded.)

Mr. Ebert nominated Mr. Hurty, of Indianapolis, as secretary.

Mr. Behrens nominated Mr. Hallberg, of Chicago, as secretary. (Seconded.)

A paper entitled "A Review of the Various Methods of Percolation," by J. W. Eckford, was presented and read. Regarding some of the statements made by the author, some criticisms were made by Messrs. Shinn, Lloyd, Markoe, and others.

At this point the committee appointed to visit the Virginia Pharmaceutical Association reported that the invitation presented had been accepted by that body, and its members would be present to hear the lecture of Prof. Remington in company with the convention.

Mr. T. J. Milner presented a paper on "The Fluid Extract of Ipecac," of which the following is an abstract:

"The experiments of the writer were in the line of extraction of the drug by alcohol of various strengths—following the methods of Rother and Robbins, and testing the resulting percolate for the amount of alkaloid as compared with amount of total alkaloid. The same drug when tested showed that when the strength of the alcohol was over 4 parts of alcohol to 1 of water, the amount of emetine was diminished in the finished product."

The section at this point adjourned to hear the address of Prof. Remington on the Metric System.

A paper entitled "The Constitutional Obligation of Congress regarding Weights and Measures," by Oscar Oldberg, was then presented and read.

Accompanying this paper the writer submitted the following resolution, the adoption of which he moved:

Whereas, The Constitution of the United States imposes upon Congress the duty of establishing fixed standards of weights and measures for the use of the people; and

Whereas, The customary weights and measures in use in the United States are arbitrary, unsystematic, inconvenient, and indefinite, being governed partly by English law, partly by tradition, and partly by chance; and

Whereas, No laws of the United States exist establishing a national system of weights and measures or fixing the values of the customary units; therefore be it

Resolved, by the American Pharmaceutical Association, That Congress be and is hereby respectfully requested to consider without unnecessary delay the importance of legislation upon this subject; and further

Resolved, That it is the sense of this Association that it would be worthy of the dignity of the American nation to celebrate the four hundredth anniversary of the discovery of America by the adoption of the decimal system of weights and measures in all governmental transactions and for purposes of foreign and interstate commerce, to take effect on the date of the landing of Christopher Columbus on this continent; and

Resolved, That copies of these preambles and resolutions be forwarded by the secretary of this Association to the Speaker of the House of Representatives of the United States, to the Chairman of the Committee on Coinage, Weights, and Measures of the House of Representatives, and to the Superintendent of the Bureau of Weights and Measures.

Prof. Sayre next read a synopsis of a paper on "The Loco Weed," in which he detailed a number of experiments which had been made in Colorado and New Mexico with a view to discover the nature of its poisonous properties, if any existed. Nothing definite had yet been ascertained as to whether such poisonous qualities were contained in the plant. This refers to the poisoning of cattle and sheep on our Western prairies. Locoism, briefly described, is a demented condition into which the animal gets, which is attributed to a plant called loco, a Spanish word meaning "crazy." The plant has been fully described in a former paper.

At this point the convention adjourned.

Second Session, Wednesday Afternoon, September 10th.—The convention was called to order at 3 P.M.

The election of officers for the ensuing year took place, Prof. Patch, of Boston, being elected chairman, and Mr. Hallberg, of Chicago, secretary.

A paper by Dr. Adolph Tsheppe, entitled "Albuminate of Iron and its Preparations," was presented and read.

Dr. Eccles, on motion duly seconded, was permitted to read a lengthy synopsis of a paper on "The Action and Properties of Pepsin," accompanied by an exhibition of specimens and certain experiments showing the cause of precipitation.

In his paper the author claimed that there was not yet a perfect pepsin on the market, that the article was of very variable quality, and that, briefly described, the best pepsins were a mass of foreign substances with only a little real pepsin in them. The therapeutic value of the pepsins was very uncertain, as shown by the experiments detailed, in connection with which he mentioned the products of certain manufacturers.

At the conclusion of the presentation of the synopsis of this paper Messrs. Fairchild and Tsheppe criticised the remarks of the author, and denied the correctness of certain statements made by him; among them chiefly the assertion that coagulated albumen readily dissolves in acidulated water without the presence of pepsin.

Mr. Seabury made the suggestion that the Publication Committee confer with the author of the paper, and have the different samples numbered, so that any investigator who wished to continue the experiments could communicate with the author and obtain the names privately. They should not appear in the report. (Seconded and carried.)

Prof. Remington presented the report of the Committee on the Chairman's Address, which unanimously indorsed the recommendations therein made. On motion the report was approved and accepted. The section then adjourned.

Third Session, Wednesday Evening, September 10th.—Owing to the large amount of unfinished business re-

maining from the last session, the section held an extra session, meeting at 8 P.M.

Mr. Seward W. Williams read a paper entitled "Belladonna Plasters."

Mr. D. L. Haigh presented a lengthy synopsis of a paper on "Adulterations of Oil of Rose," in which he stated that from a number of experiments he had found it impossible to obtain a pure article of oil of rose. In experiments made on a number of samples obtained from the Kizanlik district of Turkey, and through Schimmel & Co., of Germany, of the native roses of that country, he had found that either oil of copaiba or gingergrass was used generally as an adulterant, besides others in smaller proportions. The oil from the northern countries was always found to contain a greater percentage of stearopten than that from southern countries. In assaying the oil for ordinary purposes of perfumery, it is necessary to take out all the stearopten, and if it contains 40 or 50 per cent the loss is great.

The "French" oil is stated to be the only pure oil found on the market. This is oil of rose made in the Kizanlik district, and, having its first market in France, the French take their choice of this oil. The French also make an oil which, while claimed to be free from adulterant, was found to be quite high in stearopten, and, like certain of the German oils, was adulterated with oil of rose geranium and pelargonium.

The oil is not adulterated in this country, but by the manufacturers abroad, who distil the adulterant with it. The chief adulterant is oil of copaiba, which could not be distinguished by odor. Gingergrass was the oldest adulterant used. The oil was also adulterated in the Turkish districts where it was produced, and it was only by having agents on the spot and using extreme care that the dealers could prevent this.

"Utilization of the Soda Products of Kentucky" was the title of a paper presented by Dr. Burnham, in which he described the appliances used in the working of the product, its increasing value, and the extent in which it was found in the Kentucky deposits.

Mr. Whelpley presented a paper on "The Preparation of Syrup of Tolu," by B. Traverse, of Saybrook, Ill.

The MS. copies of papers on "Economy in the Preparation of Iodoform" and "A Pharmaceutical Test of Iodoform," by Mr. S. R. Boyce, were presented and not read, being referred to the Publication Committee.

Mr. Maisch presented a paper on "The Ethereal Oil of Polygala."

Mr. F. A. Thompson presented a paper entitled "What are the Medicinal Qualities and Purity of Terebene in the Commercial Article?"

A paper entitled "On the Emetine Valuation of Fluid Extract of Ipecac" was presented by Mr. W. Simonson.

Fourth Session, Thursday Afternoon, September 11th.—The fourth meeting of the Section on Scientific Papers was called to order at 4 P.M. on Thursday.

Mr. T. M. Connor presented and read a paper entitled "Pharmacists as Food Inspectors."

Dr. H. H. Rusby then read a paper on "Cascara Sagrada and its Allies," accompanied by an exhibition of the barks, leaves, etc., of the species. This paper was very favorably commented on by several members present. The author announced that its publication without illustrations would be practically useless. He announced that the cuts would soon be available, and the paper could then be published by anybody desiring to do so.

A short paper on "The Preparation of Citrate of Magnesia," by Mr. Stevens, of Brooklyn, was read.

Papers entitled "The Florida Phosphate Fields," by H. Robinson, M.D., and "Allotropy of Silicon," by Henry O. Cushman, were presented without reading.

The new officers of the section were then installed. Secretary Hallberg, in acknowledging the honor of election, stated that Prof. Patch, the newly-elected chairman, who was absent, had requested him to name the following committee for the section during the year, to confer with members with reference to receiving papers and queries for discussion in the section:

New York, Dr. Eccles and Mr. De Forrest; Baltimore, Messrs. Dohme and Cushman; St. Louis, Messrs. Whelpley and Good; New Orleans, A. L. Metz; Wisconsin, Adam Conrad; Cincinnati, Messrs. Lloyd and Simonson; Boston, C. R. Botell; and as associate of the committee, J. R. Tucker, of Boston.

Mr. Maisch moved a vote of thanks be tendered the retiring officers for the satisfactory manner in which they had conducted the business of the section during the past year, which was seconded, and carried unanimously.

The section then adjourned.

The Section on Pharmaceutical Education and Legislation convened on Thursday evening at 8.30.

Some papers not presented at the Scientific Section were distributed at this session, viz.:

"Pseudotsuga Douglasii, Carrière, as a Substitute for Quercus Suber," by A. O. Ingalls.

"What Amount of Sand is Present in Commercial Asafœtida?" by W. A. Puckner.

Prof. N. M. Whelpley presented a paper entitled "Synopsis of a Course in Microscopy for Pharmacists."

The section then adjourned.

Fifth General Session, Friday Morning, September 12th.

The convention was called to order at 10 A.M.

The minutes of the last general session were read, and on motion approved.

Mr. Alexander presented a supplementary report of the Committee on Nominations, placing in nomination Mr. A. K. Finlay, of New Orleans, as local secretary of the Association.

On motion the report was adopted, and the secretary instructed to cast the vote of the Association for the election of Mr. Finlay.

Mr. Sheppard made a motion that the local secretary be empowered to make all preparations for the next annual meeting, with authority to appoint his associates on the committee, which was seconded and carried.

Prof. Remington offered the following resolution: "*Resolved*, That a committee of five be appointed with power to act on and consider the resolutions of Prof. Oldberg (contained at the end of his paper on the metric system), and to report what action this Association should take in endeavoring to secure the adoption of the metric system by the government," which was seconded and adopted.

Mr. Hallberg offered the following resolution: "*Resolved*, That it is desirable that the International Pharmaceutical Congress may meet in Chicago in 1893; that a committee be appointed to report upon the matter at a future meeting, and that a hearty invitation be extended to the pharmacists of all countries."

The resolution was adopted.

Mr. Canning announced that at the last session of the Commercial Section the following committee on that section was appointed: S. A. D. Sheppard, Geo. W. Voss, L. Myers Connor. Also the following committee to confer with the Proprietors' Association and the Nat. Wholesale Druggists' Association: W. S. Thompson, Washington; J. A. Millburn, Washington; D. M. R. Culbreth, Baltimore. And as a Committee on Mutual Insurance: Messrs. H. M. Whitney, Mass.; L. Eliel, Ind.; Louis Dohme, Md.; John Ingalls, Ga.; and D. L. Haigh, Mo.

The president then appointed Messrs. Alexander and Shinn a committee to wait on the new officers and conduct them to the platform.

Mr. Alexander, in introducing the new president, Mr. Albert B. Taylor, of Philadelphia, stated that he was one of the two surviving members of the first convention, which met in 1852, and might fairly be considered one of the fathers of the Association.

Mr. Taylor, who was received with great applause, said:

Gentlemen, Members of the American Pharmaceutical Association:—I find myself unable to express my feelings for your generous reception. I thank you most sincerely for your kindness in calling me to preside over your deliberations, and can truly say that I esteem it the highest honor I have ever received. I am proud to say that I have been a member of this Association from its formation in 1852 to the present time, and have always taken a warm interest in its success and advancement. I have always been willing to contribute my small share to the common stock, and, while accepting this high and honorable duty, I do so with great diffidence. I promise you, however, that I will use my best endeavors to facilitate the business and advance the interests of this Association.

Messrs. Stevens, vice-president; C. E. Dohme, second vice-president; and J. M. Good, third vice-president, were next installed, and responded briefly, thanking the Association for the honor conferred.

Mr. Alexander, in speaking of the re-election of Permanent Secretary Maisch, said that it was unnecessary to introduce him.

Mr. Maisch: I think, Mr. President and Gentlemen, that it was at your meeting in the year 1857 that I first attended a convention of this Association. I was then a younger man than I am at the present time. They put me to work at once in various directions, and finally, in 1865, selected me, in Boston, as permanent secretary. I have held that place ever since. Notwithstanding the rejection of my recent resignation by this Association, I assure you that I will discharge the duties of the office with the same fidelity that I have done in the past.

Mr. S. A. D. Sheppard, as treasurer, was introduced, and in thanking the Association for his re-election, spoke of the very satisfactory condition of the finances of the organization, remarking that one of the most gratifying features was the membership fund, which showed that a majority of the members had already paid the dues for 1890.

Mr. Finlay, elected as local secretary for New Orleans, being introduced, said: I thank you for this evidence of good-will extended to me, and can assure you that I will do everything I can to make the meeting of next year a success; and having the best material to work upon, I know that the conclusion of the Association will be, after having visited our city, that it was good to be there. I can guarantee you a warm welcome.

Mr. Eliel: I would suggest that the secretary does not make our reception there quite too warm (laughter).

Prof. Remington read the following communication

from the president of the Section of Pharmacy of the American Medical Association :

"In conformity with the action of the American Medical Association at Nashville, your Association is invited to send delegates to attend the meeting at Washington in 1891. I hope that your Association will be able to send twenty-five or thirty members, who will all promise to contribute to the proceedings of this new section, and make it a great success."

He offered the following resolution:

Resolved, That in response to the invitation of the president of the Section of Materia Medica of the American Medical Association, there be appointed by the president of this Association twenty-five members, who shall serve as delegates to that section at its next meeting at Washington in 1891.

Mr. Haigh inquired whether the representation from the American Pharmaceutical Association would prevent delegates attending from the State Associations, as these organizations had expected to send representatives to that association.

Prof. Remington replied that he was unable to state at the time whether the president of the section had the power to invite delegates from the State Associations, but he would, at an early date, confer with him, and, if he were at liberty to do so, he would recommend that the secretaries of the State Pharmaceutical Associations be addressed and invited to send delegates to the meeting of the American Medical Association.

On motion of Mr. Bedford it was provided that the committee appointed have power to fill any vacancies occurring in their number.

Mr. Simon moved that, as a committee of five had already been appointed to attend the meeting of the American Medical Association, twenty additional names be added to that number as the proposed committee, which motion was seconded and carried, and Prof. Remington's resolution adopted.

Mr. Good moved a vote of thanks be tendered the local secretary and Committee of Arrangements for their excellent work in providing for the entertainment of the Association, to the members in Virginia, and to Lieut.-Col. Frank, of Fortress Monroe, which was seconded and carried.

Mr. Diehl was introduced, and thanked the Association for his re-election as reporter on the progress of pharmacy.

On motion of Mr. Markoe, a vote of thanks was tendered the retiring officers of the Association for their valuable services during the past year.

The minutes of the last session were then read and approved.

Prof. Remington moved that, inasmuch as the Association was not informed of the time of the meeting of the American Medical Association, and as it was important that a strong representation should attend such meeting, which would decrease the attendance at the next convention if the dates of meeting were the same, power be given the council to change the time of meeting of the American Pharmaceutical Association in the event of a clashing of dates, which was seconded and carried.

On motion of Mr. Ebert, the Association then adjourned, to meet in the city of New Orleans on the first Monday in May, 1891, unless the council orders otherwise.

SECTION ON COMMERCIAL INTERESTS.

First Session, Tuesday Afternoon, September 9th.—Mr. Eliel, chairman of the section, called the meeting to order and delivered his annual address. In it he deprecated all attempts toward repealing the U. S. revenue tax.

Regarding the rapid growth of the so-called proprietary pharmaceuticals, he denounced such as a detriment to pharmacy, and recommended that a committee be sent to the American Medical Association to ask them to cooperate and assist in checking the evil.

Regarding cutting in prices, the recommendation was made that a committee be appointed to confer with the Wholesale Druggists' Association and Proprietors' Association, and endeavor to put a stop to it.

On motion the address was received and referred to a committee, on which the chair appointed Messrs. Eckford, Nattans, and Canning.

The secretary of the section (Mr. Smith) read his annual report, in which he referred especially to the matter of shorter hours, and urged the action of the meeting upon the subject.

He referred to the Minneapolis and Ramsay County Associations' joint address (issued some time since) dealing with rate cutting, and the selling of pharmacy goods by other than drug stores at cost, recommending a system of boycotting to check it.

Mr. Seabury : At the time we had the Campion fight there were lots of men in that plan that were dishonest, and when I discovered that I withdrew, and kept on my own special plan, as I always propose to do. When you talk about cutting, you may sit here until you are black in the face. You will never be able to do anything with the manufacturers or anybody that puts up perfected packages that can be sold to any one, until you stand together like a Roman phalanx—manufacturer, proprietor, and retailer—and each for himself, and act honestly by each other. Heroic treatment should be tried. When a cutter comes into a town, let the local trade unite, and when he cuts, meet cut by cut until he gets tired of it, and that will remedy the matter.

Mr. Nattans : Isn't it a fact that at that time it was not the retailer who was at the bottom of the failure of the Campion plan? I took an active interest in that matter, and remember distinctly that it was the wholesaler, and in the very city of New York that the whole thing was knocked in the head. I think it might have been successful but for the wholesaler.

The Chairman : We have a communication from the secretary of the Manufacturing Proprietors' Association on this very subject, in response to a letter which was written by the chairman of this section. In it he says : "It has been my privilege to witness for several years the working of the several plans which have been suggested for the prevention of cutting of prices of proprietary goods, and the many obstacles which have prevented them from successfully working. It is admitted that a great majority of the proprietors and jobbers would be willing to adopt any practical scheme which would result in driving the aggressive advertising department house out of the drug business."

Unless there is any objection, this communication will be referred to the same committee as that to which the report of the Minnesota Associations has been referred.

Mr. Manning : Unless we can devise some plan wherein the proprietor, retailer, and jobber will work unitedly, we shall do nothing. There is no doubt in my mind that if the Campion plan had had the united support of all three it would have been in existence to-day, and would have been a complete success. I think the dealers themselves helped largely to down it. The time seems to have come when the three interests can unite and some definite action be taken.

Mr. Canning : I want to say, as one of the committee appointed on this matter, that at present I see no possible way for this committee to bring in any practical plan for its remedy. Papers and resolutions may be handed to us, but, so far as I am concerned, no practical plan can be devised.

Further, while I agree with many of the sentiments expressed by the resolution of the Ramsay County Association, I do not approve of the spirit of boycott it expresses, and there is the objection that they simply say to the proprietor, "You must keep your goods from the cutter." That is easier said than done. How is the proprietor to keep his goods from the cutter when he himself does not sell them? There are many proprietors to-day who will not sell their goods to cutters, but the goods get into their hands through a middle source. Therefore, I say to succeed in preventing it, united action must be had. Now, I would suggest a conference on the subject between all three organizations—the American Pharmaceutical Association, the National Wholesale Druggists' Association, and the Proprietors' Association—so that some practical plan may be provided. The individual action of one interest alone will accomplish nothing, for that has been tried and has failed.

Mr. Main : As one of the representatives of the National Wholesale Druggists' Association, I would say that it seems to me that the solution of this difficulty lies in the direction outlined by Mr. Canning. There are proprietors in this Association, and also jobbing druggists, who refuse to sell to cutters. The great trouble, as Mr. Seabury says, is that the retailers of the United States are not united, and without unanimity nothing can be done. What Mr. Canning has said of the Campion plan is also true. It was not until the proprietors discovered that the retail men were supplying the jobbers in New York City and elsewhere that they abandoned the scheme, after wasting much money and incurring great ill-will through the trial they had made of it.

In regard to the address of the Ramsay County Association, I want to say that I know of one or two instances where associations have called the attention of various proprietors to the fact that their goods were in the hands of cutters, and in some instances have named the jobbers through whom they supposed supplies had been obtained. In each instance the proprietors have corresponded with the jobbers, and received the assurance in many cases that no more of such goods would be sold, and that future orders would be declined.

Mr. Nattans : There are instances where the proprietor can control his goods outside of the drug trade. One is the Earl & Wilson Co., manufacturers of cuffs and collars, which cannot be bought in any store for less than the prices dictated by the proprietor. It is strange that the retail druggist cannot be so protected.

Mr. Sayre : I would like to ask Mr. Seabury whether he knows of any instances where the heroic treatment he recommends has been successful.

Mr. Seabury : I know of one, in Bethlehem, Pa., where they tried it; also in Chicago, I believe. Perhaps Mr. Hallberg can enlighten us as to that.

Mr. Hallberg: The only plan that has been in effect in Chicago is for every dealer to join hands and fight the cutter and hold up prices. After doing that, in three years one cutter died, one was closed up by the sheriff after having run three stores, and one had to take out a five hundred dollar saloon license because he sold liquor after midnight.

Mr. Sayre: How are they succeeding in Atlantic City at this time?

Mr. Seabury: We have been asked not to sell to certain people there, and have agreed not to do so.

Mr. Eliel: I had the honor to represent this Association at the meeting of the National Wholesale Druggists' Association, but did not receive great encouragement from that body. The only thing they said was, "Help yourselves, and then we will have to help you." The president of the National Proprietors' Association said: "The American Pharmaceutical Association is a representative body. You have some forty associations in the various States. Let them take united action, and send in either a petition or else representatives to our meetings authorized to speak for the associations as well as the American Pharmaceutical Association, and we will comply with whatever reasonable requests may be made." I think it can be done by united action, and that it lies within our own hands to prevent cutting, if we ask the proprietors to shut off the supplies. There is no speculation in proprietary goods. The price is the same the year round. Why can't we cut off the cutters? It is the rebate they obtain which enables them to be cutters. Cut off that, and the cutter will cease to exist. I would like to hear from Mr. Hallberg how the Chicago plan originated, and how it has worked.

Mr. Hallberg: I am unable to say whether this plan contains the germ of preventing cutting of prices, but it does enable any one who participates in the scheme to buy goods at the very lowest figure. It is simply a co-operative plan. It was put in operation about two and a half years ago. Ten proprietors, representing fifteen stores, formed an association, and one man does the buying. Weekly or semi-monthly meetings are held in order to make up lists of goods that are required of such staple proprietary articles as they sell pretty largely, and so obtain the best discounts. The buyer receives and distributes the goods. The cost of distribution on this plan will not exceed 2 per cent, and, as an average discount of 10 per cent is secured thereby, a net profit of 8 per cent is obtained. The scheme has worked so well in the two years and a half that it was finally extended to take in about thirty-five stores. Now a difficulty arises that, while it was possible for one man to buy and distribute for ten stores, it is impossible where thirty-five stores are concerned. A plan will shortly be perfected by which this may be accomplished. The great merit of the scheme is that the druggist is enabled to buy his goods as cheaply as possible. Another advantage is that, if a party has a large quantity of cigars for sale, for instance, at a very low price, an organization like this can purchase the lot. The organization has often bought as much as twenty thousand cigars, thereby saving 50 per cent. Another feature is that this association has undertaken to manufacture its own proprietary goods. They have now a list of about a dozen preparations, among which are a blood purifier, cough syrup, blackberry balsam, liver pills. They have even invested $250,000 in soap mills for the purpose of manufacturing a line of soaps of their own, which proved profitable, I presume.

An extension of the association is contemplated which will finally embrace the larger number of Chicago druggists, each one handling the association's preparations, which will finally take in all the preparations required to supply the ordinary wants of the community in the way of domestic remedies, and a great demand will undoubtedly be created for these goods. Of course, they are to be made by members of the company under the supervision directly of the members of the company. They will bear the label of the company on them, and of course every package will be provided upon a regular, first-class proprietary medicine plan, with a circular giving information as to what other proprietary articles this company prepares. This worked, as far as it has been attempted, quite well.

Of course, these goods will be absolutely under the control of the association, so that not a dollar's worth of them will go into the hands of any one who would be liable to cut. There is also, of course, a much greater profit in such proprietary goods than in any others. It is intended to extend this plan not only in the city of Chicago, but through the State of Illinois, and even beyond that in course of time.

Mr. Williams: Mr. Eliel has stated that the rebate plan is the cause of the cutting. He is mistaken, I think; for before the rebate plan was ever heard of, cutting existed in the United States. It is impossible to organize the whole trade of the country. By the failure of the Campion plan it has been shown that such extensive organization will not succeed. The best plan I have yet heard of is that described by Mr. Hallberg, which is in operation in Chicago. Try and adopt such a plan locally and it will soon put an end to the trouble.

Mr. Nattans: I spoke of Earl & Wilson's goods just now. By their plan no such trouble is occasioned. They do not sell to the jobbers. They sell only to the men that sell to the consumer, and you cannot buy the goods if you sell under their regular retail rate.

Mr. Ebert: Mr. Hallberg has failed to give the real basis on which the druggists of Chicago are protected against cutters. The way it was done was this: A few men in one ward came together and said: "We in this ward will not sell goods for less than their market value or regular retail value," and they adhered to it. They were the nucleus. The movement spread over the city till nearly all the principal druggists in the city united and formed the Chicago Retail Druggists' Association. There are thirty four wards in Chicago. Each ward came together and formed a central organization, framed a constitution and by-laws, elected a president, secretary, and treasurer, and a board of three directors; the dues were fixed at one dollar a year. Every ward was organized in this way. They were united with the central organization, to which the ward associations have the privilege of sending one delegate each. That organization meets once a year. The ward organizations meet once a month. This organization was effected some four years ago, and to-day there is not a cutter in Chicago outside of the department stores. According to our arrangement, any complaint as to rate cutting is made by the aggrieved party to the ward committee of three appointed for that purpose. They investigate, and take measures to prevent it if necessary. If another party in an adjacent ward causes the trouble, complaint is made to the directors of the complainant's ward, who notify the directors of the offender's ward.

Mr. Seabury: One great trouble is that, although the druggist may sell as cheap as the department stores, people will not go to him as they do to such stores, as they have an idea that they can get better bargains. Sometimes an article is advertised for sale by the department stores which they do not keep, merely for the purpose of attracting the customer, and when the article is asked for another is offered in its place.

It was here moved that the question be referred to the Committee on Chairman's Address, which was seconded and carried.

The section then adjourned.

Second Session, Tuesday Evening, September 9th.—The section was called to order at 8:30 P.M., the chairman, Mr. Eliel, presiding.

The following nominations of officers of the section for the ensuing year were made:

For President—H. J. Canning, of Boston.

Mr. Redsecker moved that the nominations be closed, and that Mr. Canning be elected by acclamation, which was seconded and carried.

For Secretary—W. M. Dewoody.

On motion of Mr. Whelpley, the nominations for secretary were closed, and Mr. Dewoody elected by acclamation.

Remarks on subjects of interest to the section being invited by the chairman, Mr. Ebert said:

One of the causes of the small attendance at State Association meetings is due to the fact that, instead of discussing practical subjects of value to the retail druggist, and by combining certain social features which would make the meetings attractive, the time is consumed in reading long-winded scientific papers, which are usually buried in the proceedings and forgotten.

Mr. James (of St. Louis): I agree entirely with the views expressed by Mr. Ebert. This matter of scientific papers is killing the State Associations. I instance the Missouri State Association, whose meeting I attended recently. Four hundred members were present on that occasion with their wives and families. Whenever scientific papers were read the audience would thin out, leaving some twenty members sitting there posing as scientists. The rest were enjoying the only holiday in the year which they got. The papers, as Mr. Ebert says, will be printed in the proceedings; if any one is interested in them, they will be found there. Therefore the social and business features should be the principal aim of these associations, for the purpose of rendering them popular and making them a lasting success.

Mr. Finlay: I cannot agree with the sentiment that the scientific features of such meetings should be subordinate to the social. No practical good can be accomplished by simply meeting for social pleasures. All civilization has been advanced by science and scientific discovery; and so with the advancement of pharmaceutical associations. If you throw aside their scientific aspect, I predict their death.

Mr. Hurty here offered the following report of the committee appointed to consider the chairman's address:

Your committee to report on the chairman's address beg leave to report as follows: As to the first suggestion, of a conference with the American Medical Association on the prescribing of pharmaceutical preparations, the committee suggests that the best results may be reached by individual work, and it is suggested, with deference to the opinion of the chairman, that it is the opinion of the com-

mittee for the simple reason that we have tried several times to have similar conferences with the medical fraternity and have invariably met with unsatisfactory results. More can be done by individual work. The pharmacist can do more in his own neighborhood, with his own physicians, than by attending conferences which would amount to nothing.

The committee recommends, as to cutting of prices of patent medicines, that a conference be held with a delegation of the National Wholesale Druggists' Association and the Proprietors' Association, and that a committee of three be appointed to represent this Association at such conference.

The committee agrees with the recommendation of the chairman relating to mutual insurance, and recommends that a committee of five be appointed to bring forward a feasible plan to be submitted at the next meeting

On motion the report was received for consideration.

Mr. McIntyre: I think that the committee has not perhaps given the first section mature consideration. We have succeeded in getting the American Medical Association to listen to us, and in the Pennsylvania Pharmaceutical Association I know that the committees having this matter in charge have been largely guided in the hope that this Association would take some action looking in the direction of getting a more definite view of what the medical people consider as medicine. It is felt that the law has given a standing to ideas in regard to the practice of medicine which are entirely opposite to each other, and that the continual supplementing of one class of medicine by others leads to confusion. In the strength of tinctures, for instance, of many manufacturers, there is a variation when a new one is introduced by any one firm, and a physician prescribing such a tincture may fail in getting the results he desires.

Mr. Eliel: In regard to the first item, as to checking the use of the so-called pharmaceutical preparations, I would say that in some cases the formula is whispered into the ear of the doctor, but put on the package in a way that no pharmacist can put it up.

Mr. James: As a member of this Association and a practising physician, I think Mr. McIntyre's words are entitled to weight. I know that physicians are more and more inclined to listen to the advice of druggists, and I know also that there is a growing disposition for conferences for an understanding with them.

Mr. Redsecker: I have had some experience in the matter under discussion. I have taken to fighting not only patent medicines, but more particularly those preparations that are alluded to here. I mean to say that we can make just as good preparations as those of the manufacturing pharmacists, and the result has been that we have driven out of the market, as far as we are individually concerned, Bromidia and Listerine, and Fellows' Syrup of Hypophosphites, and others which we make ourselves and the physicians prescribe. We make an emulsion of cod-liver oil ourselves, and physicians in our city prescribe Ross' Cod-Liver Oil Emulsion, because our firm is Ross & Co. Some time since I received a formula from a friend which had been published in the *Druggists' Circular*, and I call it "Bromadine," and now the physicians who were prescribing Bromidia, having been sampled with it (as they are by the other fellows), are now prescribing Bromadine. The result is, we sell hardly four ounces of Bromidia in a year, because they prescribe Bromadine.

Mr. James: You have found no disposition on the part of physicians to antagonize that?

Mr. Redsecker: None whatever; they fall right in with us.

Mr. Alexander: While I think it is a very good thing to fight the fire as Mr. Redsecker has done, doesn't such a procedure increase the number of patent medicines? Does he give his neighbors his formula, so that when a physician prescribes his preparation he can have it put up at any store in his place?

Mr. Redsecker: I should state that we use the formulæ of the American Formulary. I have given the formulæ of a number of our preparations that were not published, to inquirers. The formula of Bromadine, as I explained, was published in the *Druggists' Circular*.

Mr. James: I wish to emphasize my statement that there is not among physicians that antipathy to learning that most druggists seem to think there is. The great trouble is that the matter of the National Formulary has not been properly brought before them. The only practical effort to get them acquainted with this, I believe, has been made by Prof. Hallberg, of Chicago. I believe when the matter is properly presented they will be glad to avail themselves of its advantages.

Mr. McIntyre: A thought that has not been expressed yet is this: My idea is that while we have a Pharmacopœia and a National Formulary, and have all been taught materia medica, pharmacy, and chemistry, very few of us have been taught therapeutics, and therefore I hardly think we are competent to deal with this matter in some respects. A good idea would be to induce the American Medical Association to appoint a man like Mr. Diehl to take the position of supplying a complete system of medicines for the medical profession.

On motion of Mr. Nattans the recommendation (first) of the report was adopted.

The secretary read the second section of the report.

Mr. Seabury: We spent a great deal of time this afternoon on the question of how to put a stop to cutting, and the various questions which entered into its prevention. We have a gentleman here to-night who has been engaged in that work in an adjoining territory, namely, Canada. I have pleasure in introducing Mr. Clark, of Ontario, Can., president of the college in that province, who is a delegate here.

Mr. Clark: I was very much interested in the remarks that were made by Mr. Hallberg and one or two other gentlemen. There was a good deal of practical information given to the section by this gentleman. I also approve strongly of the remarks made by Mr. Ebert. In our city we suffered from rate cutting until about 1884, when business had become so demoralized that we were forced to form a local organization, which we did in such a way that it would stick. We prepared a constitution and by-laws that took in every man except the one who wanted to take advantage of his neighbor: in six months he was glad to come before the association and agree to live up to its requirements. From this one organization we have now ten in the province. We meet once a month and have a regular form of business. We do not forget the social side. We meet in general session once a year. We do our utmost to create a spirit of harmony among neighbors in trade, and with very great success. In an association where members are suspicious of each other no good can be accomplished. You cannot do this in an organization of twenty or thirty thousand druggists, but you can do it in small organizations where interests are identical. Local interests differ, and each requires its special treatment.

On one occasion a manufacturer of proprietary goods cut rates, and on being requested by the association to end it and prevent his goods getting into the hands of rate cutters, intimated that he would run his business to suit himself. Thereupon he started sending out circulars offering these low rates. Unanimous action was taken, and whenever his goods were inquired for at the druggists' the customer was informed that they were not to be had, they were not recommended. The result was, his trade dropped off to such an extent that he became willing to do the right thing and come to our terms.

Our association has also had another beneficial effect in the matter of legislation. We found in 1881 that it took nine years to get an amendment to the pharmacy law passed by our Parliament. In 1889 an amendment was proposed and passed in six months, owing to our strong representation.

Mr. Nattans moved the adoption of the third recommendation, which was seconded and carried.

On further motion the report was adopted as a whole.

Mr. Eliel here introduced the new chairman of the section, after thanking the section for the assistance rendered him during the past year.

Mr. Canning, after thanking the section for the honor of election, said that he hoped during the coming year some feasible plan for preventing rate cutting would be devised, but he was of the opinion that only united action on the part of the three interests represented by the manufacturer, jobber, and retailer would secure this end.

Mr. Redsecker moved a vote of thanks be tendered the retiring chairman of the section. (Seconded and carried.)

Mr. Seabury moved that the section adjourn to meet in New Orleans the first Monday in May, 1891, which was seconded and carried.

The section then adjourned *sine die*.

Aristol in Ozæna.

IODIDE of thymol—or aristol, as it is called—is strongly recommended by Dr. Löwenstein, of Elberfeld, in ozæna.

He gives in the *Internationale klinische Rundschau* several cases in which this remedy proved more efficacious than any other. In one case the patient, who had previously been treated with iodoform, would have been discharged from his employment on account of the smell of the drug; aristol was then employed with the most satisfactory results, the fetor vanishing, the ulcerations healing, and the scabby crusts ceasing to form. Dr. Löwenstein makes use of insufflations, which answer very well, as aristol is a fine powder.

He also paints ulcerated spots with a mixture of 1 part of aristol in 10 parts of flexile collodion.

It is necessary to keep aristol in a dark glass bottle, as it is easily acted on by light. It may be remarked that it has a very slight but not unpleasant odor, and that it is remarkably cheap.—*Lancet*, and *Therap. Gaz.*

Moses L. M. Peixotto, a well-known pharmacist of New York City, died on Sept. 6th. He was for many years a trustee of the College of Pharmacy, and for some years its secretary. Only a few weeks afterwards, his brother, Benjamin F. Peixotto, formerly U. S. Consul, followed him in death.

The Constitutional Obligation of Congress regarding Weights and Measures.*

BY OSCAR OLDBERG.

THE weights and measures of the United States are in a wholly anarchic condition. They were inherited from Great Britain in our colonial period. We have no standards provided by our own statutes. The weights and measures we use are governed in part by English law, in part by tradition, and in part by chance. Fixed standards of weight and measure are as necessary as fixed monetary standards.

If the monetary denominations of the United States were the English pound, shilling, and penny, instead of the dollar and cent; if we were coining sovereigns instead of eagles, it is scarcely possible that we would be content to permit the standards and denominations of our money of account to be governed, as our weights and measures are, by English law, or by tradition, or by chance.

If the pound, shilling, and penny were our monetary units, we would have American laws declaring that the principal unit of our money of account shall be and shall be denominated a "pound"; that the pound, and the value of the pound, shall be a fixed amount by weight of coin gold or silver of prescribed degree of fineness; and that the shilling and the penny shall, respectively, be and represent certain aliquot parts of the value of the pound. We would go further. Our statutes would prescribe the manner in which our coin shall be minted, fixing the composition, weight, and limits of deviation in the weight, of each coin, and determining the extent to which each kind of coin shall be a legal tender of payment.

It is a matter of the highest importance to the credit and prosperity of the people that our money shall have a fixed value, which must, therefore, be prescribed and regulated by law, and not by any foreign law, since foreign law is not law to us, but by our own law.

Every civilized country has a legalized currency.

Next to money, and most intimately related to it, come the weights and measures. We cannot say that all civilized nations have laws establishing fixed standards and denominations of weight and measure, for, unfortunately, there is one exception, and one only. That exception is the proud American nation.

And yet, so important is this question of uniformity in the weights and measures in use among the people that the power to establish fixed standards for them was expressly conferred upon Congress by the Constitution of the United States. Section 8 of article i. of that instrument, in enumerating the special powers expressly reserved for Congress, places the power to establish fixed standards of weights and measures next after the vital powers to lay and collect taxes for the support of the national government, to borrow money on the credit of the United States, to regulate commerce, to provide a uniform rule of naturalization, and to coin money.

While other nations have not only provided uniform metrological values for themselves, but also steadily and consistently co-operated toward the ultimate establishment of a universal system, the Congress of the United States has not even exercised its constitutional power, or, rather, fulfilled its constitutional obligation, to establish fixed standards of weight and measure for our own use.

George Washington, Thomas Jefferson, James Madison, and John Quincy Adams gave this matter special attention, and repeatedly urged that the duty imposed by the Constitution be performed, but their appeals were fruitless.

Our first President said in his first message: "Uniformity in the currency, weights, and measures of the United States is an object of great importance, and will, I am persuaded, be duly attended to." But a century has passed, and the matter has *not* been attended to.

In his opening address to the first session of the Second Congress, Washington again said: "A uniformity in the weights and measures of the country is among the important objects submitted to you by the Constitution, and, if it can be derived from a standard at once invariable and universal, must be no less honorable to the public councils than conducive to the public convenience."

Thomas Jefferson, while Secretary of State, prepared, at the request of Congress, several reports on the subject. Mr. Jefferson had, as the representative of his country, resided in Paris during the great Revolution. He was of course inspired by the nobler ideas of that stirring period, one of which was a universal language of weights, measures, and money, in perfect harmony with our arithmetic. About the 20th of May, 1790, he had finished a report containing the description of a new and decimal system of weights and measures constructed by himself, which was the first decimal system of weights and measures ever devised, and in every way as meritorious as the metric system subsequently perfected in France. This report was submitted to the House of Representatives July 13th, 1790. One of the several special committees appointed by the House during the sessions of the First and Second Congresses to consider this important subject recommended the adoption of Jefferson's decimal system; but the report went over to the next Congress, was then sent to another special committee, and there the matter ended for the time being.

Washington called the attention of Congress again to the importance of immediate legislation in this direction, and more committees were appointed. Meantime the metric system was adopted by France with the avowed purpose of finally securing, if possible, its adoption throughout the civilized world. On January 8th, 1795, the President sent to Congress a communication from the French Minister descriptive of the metric system and accompanied by copies of the provisional meter and kilogramme. The first session of the Fourth Congress referred this communication, together with Mr. Jefferson's report, to another special committee, which reported April 12th, 1796, by bill. That committee was decidedly in favor of some decimal system, but could not decide between Jefferson's system and the metric system, expressing preference for units of length and weight not materially differing from the existing foot and pound. Its report, however, practically favored Jefferson's plan, and its bill provided for—the early introduction of *some* system? No, for the appointment of a commission to make experiments. This bill passed the House, but on its third reading in the Senate was laid over until the next session and so lost. Afterwards more special committees were appointed, reports received, and nothing accomplished. Then the discussion of the subject ceased until after the war of 1812.

President Madison, in his message of December 3d, 1816, brought the matter before the national legislature as follows: "Congress will call to mind that no adequate provision has yet been made for the uniformity of weights and measures contemplated by the Constitution. The great utility of a standard fixed in its nature, and founded on the easy rule of decimal proportions, is sufficiently obvious. It led the government at an early stage to preparatory steps for introducing it, and a completion of the work will be a just title to the public gratitude." The Senate responded to this earnest appeal, taking some further "preparatory steps" by referring the subject once more to the Secretary of State for report. Two years passed. Then the House of Representatives followed the example of the Senate. Another special committee of the House was appointed, and in due course reported certain resolutions providing for the adoption of fixed standards, and for the appointment of a commission to carry out the plans proposed, but this commission did not favor any new system. The resolutions were not adopted.

On February 22d, 1821—thus on the anniversary of Washington's birth—an exhaustive report on the weights and measures was sent to Congress by John Quincy Adams, the Secretary of State. The whole subject was treated of in great detail, and the preparation of this report had required four years. At that time the metric system had not yet been adopted by any government except the French, and was far from popular among the French people. Nevertheless Mr. Adams concluded that "final and universal uniformity of weights and measures is the common desideratum of all civilized nations," and that the universal establishment of the French system, although "struggling for existence even in the country which gave it birth," would be a "universal blessing," adding that "it would be worthy the dignity of the Congress of the United States to consult the opinions of all the civilized nations with whom they have a friendly intercourse, to ascertain, with the utmost attainable accuracy, the existing state of their respective weights and measures, to take up and pursue with steady, persevering, but always temperate and discreet exertions the idea conceived and thus far executed by France, and to co-operate with her to the final and universal establishment of her system."

But while he thus looks forward to the ultimate adoption of the metric system all over the world, and recommends to the Congress of the United States to labor steadily and perseveringly for the accomplishment of that end, he at the same time urges Congress to proceed *at once* to "such declaratory enactments and regulations as may secure a more perfect uniformity in the weights and measures now in use throughout the Union."

Things have changed since then. The metric system is no longer struggling for existence; its universal establishment is almost achieved. But Congress has failed to establish by law either the metric system or any other system of weights and measures in our country. The elaborate reports and recommendations of Jefferson and Adams have been forgotten. So far as concerns national legislation in regard to our weights and measures, the past century has been a century of hesitation, indifference, and failure. Yet the subject is more important today than it was a hundred years ago. Indeed, it becomes more important every day. Our nation and its industry and commerce are growing more rapidly than ever,

* Paper presented to the American Pharmaceutical Association at its annual meeting at Old Point Comfort, Va.

while the confused state of our weights and measures continues.

Instead of fixing the standards of weights and measures, Congress has evaded its duty and responsibility. Lacking the courage to decide between the past and the future, the old and the new, notwithstanding the absence of any present legally established system, our national legislators simply "resolved" that the Secretary of the Treasury furnish to the States and Territories the "standard weights and measures" they might need.

In the absence of legalized standards the Secretary of the Treasury adopted such *provisional standards* as seemed to him best. They were intended simply to fix and maintain the values of the denominations found to be in general use in the United States, until such time as Congress should see fit to pass the needed laws establishing a permanent system.

The weights and measures we use are assumed to be: the units of length legally established in Great Britain; the old wine measures and Winchester measures formerly employed in England, but abolished by law sixty-four years ago in that country; the troy and avoirdupois weights; and the old English medicinal weights and measures, which were discarded in England together with the wine and Winchester measures.

The provisional standards adopted by the Treasury Department on the recommendation of Mr. Hassler, Superintendent of Weights and Measures, in 1832, for the construction of the "standard weights and measures" to be furnished the respective States, are the following: A brass scale prepared by a Mr. Troughton, of London, for the Coast Survey of the United States, governs the standard measures of length; the Hassler gallon is the volume of 58,372.2 grains of distilled water at the temperature of 39.83° F., weighed in the air at 62° F., barometer at 30 inches; the Hassler bushel is the volume of 543,391.89 grains of distilled water of the same temperature and weighed under the same conditions as in the case of the liquid gallon; the weights are standardized by "the standard troy pound of the Mint of the United States," to which we will have occasion to refer again.

It is not improbable that the Troughton yard is identical with the English yard; and it is generally assumed that the Hassler gallon is identical with the discarded English wine gallon of 231 cubic inches, and the Hassler bushel with the discarded English Winchester bushel of 2,150.42 cubic inches, which assumption is probably *not* true.

Means for the accurate determination of values are indispensable to science, industry, and commerce. Fixed standards of weight and measure are as important as a sound currency. They are not only "conducive to the public convenience," but necessary to the preservation of the public morals. Hence no civilized nation can afford to leave its weights and measures to tradition, usage, and inference. Money cannot be coined without reference to weight. Our statutes of necessity define the value of the dollar, or the dollar itself, by declaring that the weight of the gold coin or silver coin shall be a certain fixed number of "grains"; yet there is nothing in these statutes to define the weight of the grain itself!

The United States has one prototype standard adopted by Congress—not to insure uniformity in our weights, but solely for the purpose of regulating our coinage, although the Treasury Department adopted it to be also a model for the construction of the standard weights. It is a brass copy of the British troy pound, procured in 1827, and used as the standard of weight by the Mint of the United States for *forty-six years before it was adopted by law!* The adoption of this brass weight as the standard of weight by the Treasury Department in 1832 does not seem to have been regarded by Congress as sufficient, for in 1873 a law was enacted which now constitutes Section 3548 of the Revised Statutes of the United States, and reads: "For the purpose of securing a due conformity in weight of the coins of the United States, the brass troy pound procured by the Minister of the United States at London, in the year 1827, for the use of the Mint, and now in the custody of the Mint at Philadelphia, shall be the standard troy pound of the Mint of the United States, conformably to which the coinage thereof shall be regulated." But the Statutes do not say how that Mint pound shall be subdivided, or fix the value of the ounce or of the grain in any manner; nor do they tell us what is meant by a yard, foot, inch, bushel, gallon, quart, pint, or other denomination of measure, although the laws relating to imposts, postage, and other matters name several of these units. If Congress imposes a duty of so much per yard or per gallon, should it not also state what constitutes a yard or what the gallon is? Or is English law, tradition, or usage to decide? Since Congress did not regard the action of the Treasury Department as final in regard to the adoption of the standard troy pound, it cannot regard the action of that department final as to the adoption of the other provisional standards; and we learn about our denominations of weight and measure and their values, subdivisions, and multiples, not from our laws, but from our schoolmasters.

The British troy pound is by British law divided into 5,760 equal parts called grains; it is, therefore, *assumed* that our troy pound is equally subdivided.

Should this brass weight which is denominated "the standard troy pound of the Mint of the United States," be injured or lost, it is to be presumed that the Minister of the United States at London will be instructed once more to obtain a copy of the English standard troy pound by the courtesy of the government of Great Britain, in order that the American people may be enabled to resume the proper regulation of its coinage. It may happen, however, that we will never again be able to obtain a copy of the English standard troy pound, for the British nation is preparing to get rid of it. The British Standards Commission has recommended that troy weight be abolished, and it will undoubtedly be done, for Great Britain now has two kinds of weights, while it has but one kind of long measure and one kind of measure of capacity.

In the absence of the adoption by Congress of a complete and consistent code of laws establishing the necessary denominations and standards of weight and measure, the respective States and Territories have legislated more or less freely on the subject, and thereby added to the confusion. It has been decided that "the constitutional provision giving Congress the power 'to fix the standards of weights and measures' does not extinguish the right of the State over the same subject *until Congress shall have exercised the power conferred*" (Brightly's Purdon's Digest of the Statutes of Pennsylvania).

The following examples are sufficient to illustrate the degree of care and intelligence with which such laws have been passed:

The Revised Code of Maryland (art. xxxii.) says: "The standards for weights and measures of this State, except as otherwise provided in this article, *shall be such as are used at the custom house in the city of Baltimore.*"

The statutes of Alabama (sec. 1217) say: "There is but one standard of measure of length and surface, one of weight, and one of capacity, throughout this State, which must be in conformity with the standard of measure of length, surface, weight, and capacity *established by Congress*"; but Congress has never established any standard except the Mint pound.

The penal code of Arizona (sec. 862) says: "A false weight or measure is one which does not conform to the standard established by the laws of the United States of America"; but the laws of the United States of America are silent on the subject.

The same code of Arizona says further: "In all sales of articles which are sold in commerce by avoirdupois weight, the seller must give the purchaser full weight *at the rate of sixteen ounces to the pound.*" This is the only place in which the laws of Arizona intimate that there ought to be at least sixteen ounces in one pound avoirdupois; but it has nothing to say which affords any clue as to what constitutes either the pound or the ounce.

The great State of New York passed a law in 1829* which forcibly illustrates what evils are possible while Congress neglects to exercise its constitutional power. The first four sections of this law are as follows:

"SEC. 1. The unit or standard of measures of capacity, as well for liquids as for dry commodities not measured by heaped measures, from which all other measures of capacity shall be derived and ascertained, shall be *the gallon.*"

"SEC. 2. *There shall continue to be two kinds of gallons,*" etc.

Section 3 creates and establishes a liquid gallon, the capacity of which is the volume of 8 pounds of water at its maximum density; and Sec. 4 creates a dry gallon of such capacity as to contain 10 pounds of water at maximum density. Both of these gallons differ from any other gallon ever used in any other part of the world. It is highly improbable that either of these gallons was really ever used in New York; but upon this subject I have no information.

That law remained in force (on paper?) until 1851. In that year the State of New York adopted "the standards of weights and measures furnished by the United States." Nearly all the States have done likewise. But several of the States have described in their laws, as among the standards thus adopted, a wine gallon measure of "231 cubic inches" and a half-bushel measure of "1,075.21 cubic inches." The actual standard measures received and adopted were of course in conformity with the Hassler standards, according to which a gallon is the volume of 8.3389 pounds, and the bushel the volume of 77.6274 pounds, of water. Even if it were wholly true (and it is believed by experts *not* to be strictly true) that 8.3389 pounds of water measure 231 cubic inches, and 77.6274 pounds 2,150.42 cubic inches, it will hardly do to try to regulate the specific weight of water by law. To regulate the capacity of the gallon by weight is practicable; it is also practicable to fix it by cubic measure; but certainly not by both methods simultaneously. It may as well be legislated that man's work *shall* be infallible.

There is one "standard measure of capacity" in general use in the United States, which has been regulated (?) by law in the several States and Territories in such a

* This law is published in the R. S. of N. Y., 1889, with this note: "Most, and probably the whole, of it was superseded by L. 1851, ch. 134; but as some doubts may arise as to how much of it is in force, it is inserted here."

fashion that it is an open question whether it should not be regarded as a denomination of weight rather than of volume. I refer to the much-abused bushel. We have already referred to the fact that the Treasury Department regards the bushel as the volume of 77.6 pounds of water, while several of the States declare that it is 2,150.42 cubic inches. But the same States, and, in fact, nearly all States and Territories, have further passed laws fixing the contents of the bushel by weight of certain commodities, and their standards differ widely. A bushel of apples in Maine is 44 pounds, but in Wisconsin 57 pounds; a bushel of barley in Louisiana is 32 pounds, but California law makes it 50 pounds; a bushel of buckwheat is 40 pounds in Dakota, but it takes 56 pounds of it to make a Kentucky bushel; a bushel of clover seed varies in different parts of the country from 45 to 64 pounds, oats from 26 to 36 pounds, rye from 32 to 56 pounds, potatoes from 50 to 60 pounds, and salt from 50 to 80 pounds. In Indiana a bushel of coal means 80 pounds if the coal be mined within the State, but only 70 pounds if mined elsewhere. No further proof would seem to be needed that these commodities should never be sold by the bushel, but always by the pound.

Several State laws also refer to "heaped measures," which for obvious reasons should be entirely discarded.

So great is the confusion concerning the weights and measures in use among us that such a book as Webster's Unabridged Dictionary still informs us that New York has a bushel of the capacity of 80 pounds of water, and that a pint in medicine is 12 ounces, although no such medicinal pint exists, while the two medicinal pints which do exist in England and the United States, being in daily use, each containing 16 ounces (though not ounces of the same kind), are not mentioned in the book.

Now let us see what weights and measures are used in other countries.

Great Britain uses a disjointed system almost as bad as ours, but all its denominations and standards are at least fixed by law. Russia also has weights and measures of its own unlike those of any other country. *All the rest of the civilized world uses the metric system exclusively.*

But, although the metric system is not compulsory in Great Britain and the United States, it is permitted by special enactments in both countries.

By act of Congress approved July 28th, 1866, it was declared "lawful throughout the United States of America to employ the weights and measures of the metric system" (R. S., sec. 3569). The same law (R. S., sec. 3570) undertakes to fix the values of the respective metric units, which are well understood throughout the civilized world, by stating their equivalents in terms of the weights and measures in common use, which are *not* understood. The whole world knows what a liter is, but nobody knows, except by tradition and usage, what an American quart is, dry or liquid. Yet American law fixes the value of the liter by declaring it to be 0.908 dry quart or 1.0567 liquid quarts. It would have been more to the purpose to fix the value of each quart in terms of the liter.

On the day preceding the date of the executive approval of the permissive act of July 28th, 1866, Congress passed a joint resolution *requiring* the Secretary of the Treasury to furnish each State of the United States "one set of the standard weights and measures of the metric system for the use of the States, respectively." As Congress did not provide for any material standards of the metric system to be used as types, I presume that the necessary copies of the French meter and kilogramme were procured from Paris through our State Department. All our States are probably by this time provided with the requisite standard weights and measures of the metric system.

Under section 3880 of the Revised Statutes, the Postmaster-General is *required* to "furnish to the post offices of the United States exchanging mails with foreign countries, and to such other offices as he may deem expedient, postal balances denominated in grammes of the metric system, 15 Gm. of which shall be the equivalent, for postal purposes, of ½ oz. avoirdupois, and so on in progression."

During the Forty-fifth and Forty-sixth Congresses, the Committee on Coinage, Weights, and Measures of the House of Representatives gave the question of the introduction of a national system renewed attention. Reports were called for as usual, and as usual without any practical result. Many purely imaginary and some real difficulties were urged against a change—not against the metric system, but against *change*. One of these reports gravely asserts that "detrimental confusion" would result from the adoption of the metric system, particularly in the commercial relations of this country "with Great Britain and other countries where the system of weights and measures is the same as that of the United States." But the avoirdupois weight and the measures of length are the only weights and measures in use in both countries; their measures of capacity are not the same; and no other country uses any of the weights or measures of either England or America. The United States took part in the formation of the International Bureau of Weights and Measures established by the International Metric Convention held at Paris May 20th, 1875. The object of that Bureau is to facilitate the universal adoption of the metric system, and to furnish, compare, and verify prototypes of the metric standards and copies of the same. Among the countries which co-operate and contribute to the maintenance of this Bureau are Germany, Austria-Hungary, Belgium, the Argentine Republic, Denmark, Spain, the *United States* of America, France, Italy, Peru, Portugal, *Russia*, Sweden and Norway, Switzerland, Turkey, and Venezuela. Thus of the three civilized countries not yet using the metric system to the exclusion of all other weights and measures, two are members of the International Metric Bureau, Great Britain alone being not represented.

But in Great Britain, too, there has been and is a strong movement toward the ultimate adoption of the metric system. On the 8th day of April, 1862, the House of Commons appointed a select committee to consider the practicability of introducing "a simple and uniform system of weights and measures, *with a view not only to the benefit of the internal trade*, but to facilitate trade and intercourse with foreign countries." That committee unanimously recommended the introduction of the metric system, bringing in a bill on the 13th of May, 1863, which provided that the exclusive use of that system be made *compulsory after three years.* The bill passed the House of Commons by a large majority vote, but was never acted upon by the House of Lords. A year later another bill passed both houses of Parliament rendering the use of the metric system permissive, but not compulsory.

The fact that the world has a decimal arithmetical notation renders the ultimate adoption of decimal weights, measures, and money inevitable. The only countries that do not now have decimal weights and measures are those which have not yet adopted the metric system. The United States, Great Britain, and Russia must make a *change* in order to secure the advantages of weights and measures in harmony with our arithmetic. The reason they have not already adopted the metric system used in all other civilized countries is not that any other existing system is better, or even as good, but that they are unwilling to make *any change* because of the temporary trouble it necessarily involves. Endless trouble and confusion have always been predicted as the unavoidable results of change; these difficulties are imaginary. Why did not these prophetical disasters follow the adoption of the metric system in Germany, Austria, and all the other countries which have long ago introduced the metric system to take the place of the weights and measures they previously used? That no change can be made without *some* effort and temporary inconvenience is undeniable; but if we do not sow, neither shall we reap. The benefits of the change will appear far more rapidly now than they came to France and even to Germany. They were willing to make a sacrifice for the benefit of future generations. Are the United States, Great Britain, and Russia struggling against fate in the hope that the effort and inconvenience might fall on our children as well as ourselves, on the principle that as posterity can do nothing for us, neither should we do anything for posterity? If so, they are short-sighted as well as selfish. The generation that adopts the metric system now will live to enjoy its benefits.

A perfect system of weights and measures, worthy to be universal, must not only be decimal, but must also be characterized by the simplest possible relations between its denominations of length, capacity, and weight, respectively. The units of measures of capacity must bear a simple relation to the units of length on the one hand and the units of weight on the other. This correlation of the units is one of the great merits of the metric system, and no other decimal system that might be devised would equal the metric system unless it had equally correlative units. Other decimal systems have been actually introduced from time to time in several countries, only to be abolished again in favor of the metric system. This correlation of the units is a highly important point, which scientific men all understand, but which is generally ignored by a great majority of those who argue against the adoption of the metric system to take the place of the old. If we are ready, then, to acknowledge the immense value of a universal system of weights and measures, we must also admit that only a *perfect* system will ever be universally adopted. The world would never adopt the weights and measures of Russia, nor those of Great Britain, nor still less the alleged weights and measures of the United States. The peoples who have already adopted the metric system number over five hundred millions, while the three nations which have not adopted it number less than half that population; and two of these countries, with over one hundred million people, have made the metric system permissive, while the third has committed itself in favor of the ultimate adoption of that system by co-operating in the establishment of the International Bureau of Weights and Measures.

The metric system is actually employed in the United States by the Marine Hospital Service, the Coast and Geodetic Survey, the medical department of the navy and other scientific bureaus of the government, and by scientific men generally. The American Association for the Advancement of Science has persistently labored for its general introduction, memorializing Congress more

than once in favor of its adoption. The American Medical Association, the American Association of Architects, the Association of Civil and Mining Engineers, the Association of Master Mechanics, the Pharmacopœial Convention of the United States, and the American Pharmaceutical Association—all have placed themselves on record as advocating the adoption of the metric system. The Pharmacopœial Convention which met at Washington last May, consisting of delegates from the medical and pharmaceutical colleges and societies in all parts of our country, unanimously ordered that the weights and measures hereafter used in the Pharmacopœia of the United States shall be those of the metric system, and no other.

No difficulty whatever will be experienced by any person of ordinary intelligence in learning to use the metric system, if he will.

I have taught a thousand pharmaceutical students to use it, and have never met with one student who could not readily learn it.

The use of the metric system for *all* purposes may not be adopted as easily as it is adopted in chemistry, pharmacy, and medicine, but it is nevertheless irresistible. The only serious difficulty which arises from a change of system seems to be that attendant upon changes in land measurements. If it be deemed best, the old land measures upon which the public surveys are based and by which the titles and conveyances of lands and lots are defined can be left untouched until such titles and conveyances shall cease to exist.

It is in commerce and industry and in science that a universal decimal system is especially valuable. Lands and lots are permanent and immovable, ownership in them is traced through generations, they are not frequently transferred, and smaller lots are seldom divided. But there is no *permanent* private ownership in anything else that can be measured. All other kinds of property, as machinery and all movable commodities, are produced and distributed and are perishable. In all computations attendant upon foreign, interstate, and local trade and transportation, a universal decimal system would indeed be a "universal blessing."

Suppose the merchant who sells cloth should be suddenly deprived of his yard stick and given a meter stick instead. He would simply have to use the meter stick, sell the meter at one-ninth more than the selling price of the yard, and order all his cloth by the meter instead of by the yard thereafter. His customers might for a generation continue to ask for cloth by the yard; but the new yard would be quite as convenient to them as the old.

If the grocer should be obliged to exchange his quart measure for the liter, he would find the liter measure quite as handy, and would only have to charge 6 per cent more for the new quart. In the same way would he find that it is not more difficult to weigh sugar with metric weights than with avoirdupois weights, and if his customer calls for a pound of sugar it would not occasion any difficulty were he to sell ½ Kgm. instead, charging 10 per cent more for it than he formerly charged for the pound. After a very brief time, the merchants would hardly be conscious of the fact that any change had taken place.

In 1881 I visited my native country. The metric system had then been the only legal system of weights and measures for years. No other weights and measures were permitted. Yet one of my first experiences on that visit was to hear a dealer speak of quarts instead of liters in referring to a delivery of milk. When I expressed surprise, saying that I supposed the metric system to be the only one used, the reply was that the liter was meant when the Swedish name for the quart was used, and that the liter measure was the only quart measure in existence. But as names do not constitute the metric system, it makes little difference whether the meter be called a meter or a yard, whether the liter be termed a liter or a quart.

In some countries it was deemed necessary or useful to prepare the way for the adoption of the metric system by the temporary use of compromise systems. This was done in several German countries, Sweden, Switzerland, etc.

In Switzerland a new *foot* was adopted which was exactly 0.3 meter. The Ordnance Board of the United States recommended (1877) the adoption of the same foot in our country. This would have given us a metric yard of 9 decimeters, which would be only about half an inch shorter than the English yard; a multiplication by $\frac{9}{10}$ would convert yards into meters, and a multiplication by $\frac{10}{9}$ would convert meters into yards. A cube upon ½ of that new yard (4 new inches), or 64 new cubic inches, would then correspond exactly with the liter, and might be called the new quart. If then the weight of 1 new pint (or ½ liter), which would be exactly 500 Gm., should be called the new pound, the new cubic inch of water would weigh exactly ½ new ounce, and the new ounce would be about 10 per cent larger than the avoirdupois ounce, or almost the exact equivalent of the troy ounce. But this would after all only give our weights and measures a simple relation to the units of the metric system, and establish simple relations between our measures of length, capacity, and weight, without giving us decimal subdivisions, which are necessary to bring our weights and measures into harmony with the universal system of arithmetical notation.

If any sort of compromise is to be tolerated at all, let it be simply the permissive use of the *names* of the old units to designate the new, to a limited extent.

The International Metric Bureau has supplied the United States with copies of the new international prototypes of the meter and kilogramme. These copies are made of iridio-platinum. The meter is regarded as an absolutely accurate copy of the "Meter of the Archives" at 0° C. The kilogramme weight sent us (No. 20) is copied from the "Kilogramme of the Archives," and has an ascertained correction of —0.039 Mgm.

It is conceded and evident that whenever Congress does take some action to provide our nation with proper laws and consistent standards of weights and measures, the old customary weights and measures will not and cannot be retained. The ultimate adoption of the metric system seems inevitable. We have now no legalized standards and denominations at all, unless sections 3569 and 3570 R. S. are to be construed as making the metric weights and measures our only legalized system.

This then is the opportune time to take another and decisive step. It would be in the greatest degree desirable to declare by law the newly arrived copy of the Meter of the Archives to be the only and absolute basis and prototype standard of the United States for all weights and measures hereafter to be used in our country. The meter defined by this iridio-platinum bar should be declared to be *the* meter of the United States. Provision should be made for its preservation, and a sufficient number of accurate copies should also be provided as working standards for use in comparing and verifying the standard weights and measures furnished the States respectively.

The metric system could now be adopted by law to take effect in 1892 or 1893, in commemoration of the quadricentennial of the discovery of the American continent, to be used at least in all governmental transactions and in foreign and interstate commerce and transportation.

May we not reasonably expect Congress now to put an end to the present chaotic condition of things, and to place this nation on the same footing with Germany, France, Central and South America, and the rest of the metric world?

I believe that this nation has it in its power to decide *now* upon the immediate establishment of the metric system throughout the world; for if this country should set the date for its adoption by our people in relation to imports and exports, the postal service, interstate transportation, etc., Great Britain and Russia must soon follow the example.

The recent sitting of the Pan-American Congress at Washington, and the results which it is hoped may ultimately grow out of its deliberations, should remind Congress that the countries represented in that conference have long since and irrevocably adopted the metric system.

Surely Congress will not permit this grand opportunity to pass. Let it now effectually co-operate with the rest of the civilized world "to the final and universal establishment of the metric system," and at the same time fulfil its constitutional obligation to provide for the people of the United States a code of complete, specific, and consistent laws establishing "fixed standards of weight and measure"—an obligation imposed a century ago.

It would, indeed, "be worthy the dignity of the Congress of the United States" to celebrate the four hundredth anniversary of the discovery of America by conferring upon mankind now, so far as it can, the "universal blessing" referred to by John Quincy Adams.

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Rate of Decomposition of Chlorine Water by Light.—By studying the action of diffused daylight and sunlight on chlorine water by means of the voltaic balance, the author finds that the decomposition at first takes place with moderate uniformity and gradually diminishing decrease of voltaic energy. At the minimum, the liquid contains only hydrochloric, hypochlorous, and chloric acids. On further exposure the voltaic energy increases slowly until the solution contains only hydrochloric acid and hydrogen peroxide. Thus there are here two essentially different periods of chemical change—first, the period of the formation of oxygen acids of chlorine, and, second, the period of the decomposition of these acids into hydrochloric acid and hydrogen peroxide.—G. Gore in *Proc. Roy. Soc.* and *J. Chem. Soc.*

Simple and Rapid Preparation of Pure Gases.—Instead of using an acid for the evolution of carbonic anhydride, sulphurous anhydride, and similar gases, it is convenient to use sodium hydrogen sulphate or sodium bisulphate.

A mixture of equivalent quantities of the respective salts in powder gives, when wetted with water, a regular stream of the required gas, which will be free from the impurities usually derived from the use of an acid.—H. Borntraeger in *Zeit. anal. Chem.* and *J. Chem. Soc.*

Pseudotsuga Douglasii, Carriere, as a Substitute for Quercus Suber.*

BY A. O. INGALLS.

ABOUT five years ago my attention was directed to the bark of the *Pseudotsuga Douglasii* as a possible substitute for the *Quercus Suber*, and under the impression that it might possess a future commercial importance. While the results which I have obtained are not satisfactory in a commercial sense, yet they are such that, in the hands of those more able to surmount the difficulties, it may become a good substitute for the cork of commerce. This article is written, therefore, more for the purpose of calling attention to its possibilities than otherwise.

The writer submitted specimens of the bark to several cork manufacturers for the purpose of obtaining an expression of opinion regarding its commercial value, which generally was favorable under conditions of supply. At that time it was impossible to supply any large quantity of bark of good quality, and there the question rested.

The question then arose regarding the cultivation of the tree in a manner similar to that of the cork oak of Europe. Having collected from private and government sources all the literature relating to the cork industry that I could obtain, the writer then submitted the tree to experimentation covering a period of nearly four years, which probably is too short to determine fully the questions involved, but the result thus far is an improvement in the yield and quality of the bark—of which I submit samples of the bark under normal conditions of growth, and of that under a pseudo-cultivation. It will be seen that the tree, under favorable conditions, is susceptible of improvement, but my results do not show that it is yet in a condition to be utilized as a commercial product, or as an economical substitute for the cork of commerce.

The difficulty which has seemed insurmountable has been to prevent the fissuring of the bark, the cause of which is probably to a certain extent climatic, for observation has shown that where the trees are sheltered in such a manner as to reduce the force of the climatic causes, the disposition of the corky layer is more regular and the fissures not so deep, and even exposed surfaces of the same tree show more and deeper fissures than that of the opposite side. Treatment of the tree in a manner similar to that employed in the cork forests also diminishes the frequency and depth of the fissures.

The *Pseudotsuga Douglasii* has some advantage over the *Quercus Suber* in this, that the corky layers are formed earlier and on younger trees, and a good sample is but little inferior to that of commercial cork, therefore it has this financial proposition in its favor.

To those who may be interested in this subject I will be pleased to impart such information as I can, in the hope that its possibilities may be tested.

MURRAY, IDAHO, August, 1890.

On the Emetine Valuation of Fluid Extract of Ipecac.†

BY WILLIAM SIMONSON.

THE pharmacy of ipecac, as contained in the pharmacopœia, is extremely simple, requiring only the preparation, direct from the drug, of a fluid extract from which are made the syrup and wine and the tincture of ipecac and opium. Whatever is to be gained in having these galenicals of constant emetine strength may be most readily reached, therefore, by subjecting to an emetine valuation the aqueous solution obtained in making the fluid extract.

In the official method of obtaining this aqueous ipecac solution, the fat, wax, and other ether-soluble constituents of the drug, as extracted by alcohol, are very largely removed and left upon the filter, about 10 or not more than 15 per cent remaining in solution. Of the total ether-soluble substances obtainable from the aqueous ipecac liquid, when first rendered acid and then alkaline, 4 to 5 per cent will come from the acid fluid, and 96 to 95 per cent from the same fluid after being made alkaline.

The residue from the first extraction will contain scarcely more than a trace of alkaloid, while that from the second will consist of emetine of a quality to be described further on. Being in relatively small proportion, the non-alkaloidal substances may be removed almost perfectly by ether from the acid solution, leaving nothing but emetine to be extracted when the liquid is made alkaline.

Five C.c. of the aqueous solution (= 6 Gm. ipecac) were washed, in succession, with 4 portions of ether, 25 C.c. each, and the ether solutions washed first with 10 C.c. acidulated water and then with 10 C.c. water. On evaporation the residues weighed: 1st, 0.0027; 2d, 0.0017; 3d, 0.0004; 4th, 0.0000.

Other measures of the solution, 5 C.c. each, cleaned by ether, when made alkaline by ammonia and extracted by fresh ether, yielded the following quantities of alkaloid residue:

Volume of Aq. Sol.	Vol. Ether	Alkaloid. Fractions	Alkaloid. Total
40 C.c.	50 C.c.		
	40 "		
	20 "		
	20 "	.....	0.0905
30 C.c.	30 "	0.0954	
	30 "	0.0009	
	20 "	0.0007	
	20 "	0.0000	0.0970
25 C.c.	30 "	0.0965	
	25 "	0.0010	
	20 "	0.0003	
	20 "	0.0000	0.0978
20 C.c.	25 "	0.0838	
	25 "	0.0113	
	20 "	0.0030	
	15 "	0.0000	0.0979
17 C.c.	25 "	0.0912	
	20 "	0.0047	
	20 "	0.0013	
	15 "	0.0004	0.0976

In this solution the alkaloid is twenty times as great in amount as the non-alkaloidal substances, and this ratio has been closely maintained in all specimens of the drug that have been worked by these hands.

As the emetine residues from equal volumes of the solution are moderately uniform, the error of measuring being about 1 per cent of volume used, the method would appear trustworthy, and is given here in detail as sufficiently meeting the requirements of an assay process.

Assay of Aqueous Solution of Alcoholic Extract of Ipecac.

Take of the Aqueous Solution .... 2,50 C.c.,
or sufficient to represent about 5 Gm. Ipecac.
Water,
Stronger Ether,
Water of Ammonia, 10 per cent,
Dilute Sulphuric Acid, 10 per cent.... each a sufficient quantity.

To the solution, contained in a stoppered bottle, capacity 30 to 35 C.c., add 5 C.c. of dilute sulphuric acid and 20 C.c. ether, shake them well together for five minutes, and place aside until they have almost completely separated. Pour off the ether as closely as possible into a separatory funnel of 125 C.c. capacity, add to the bottle 20 C.c. of ether, shake, and pour off as before, repeating the washings a third and fourth time. Transfer the aqueous solution to a separatory funnel, capacity about 60 C.c. To the ether washings add 5 C.c. of water and 3 C.c. of dilute sulphuric acid, shake well together, allow to separate, and draw off the lower aqueous layer, using it to rinse the bottle, before adding to the contents of the second separator.

To the second separator add 25 C.c. of ether and 1 C.c. of water of ammonia, or sufficient to make the mixture strongly alkaline. Immediately shake the liquids together, but not violently, for about five minutes, or until the aqueous layer becomes perfectly clear, and place aside in a cool place until separation is nearly complete. Draw off the lower layer into the first separator (the ether washings having been poured out) and add to it 20 C.c. of ether. Shake the liquids together during five minutes, allow to separate, and run the aqueous solution into a third separator. To this add 15 C.c. ether, again shake together, and when separated draw out the aqueous liquid, and place it aside as sufficiently extracted. Pass in succession through the second, first, and third separators (shaking well after each addition and transfer) distilled water rendered faintly alkaline with ammonia, using 5 C.c. for each washing, until the last portion comes off colorless, about four being necessary. Decant the ether solution from the second separator into a tared beaker or dish, capacity about 75 C.c., taking care that no drop of water passes in with it. Pour the ether of the first separator into the second, rinse around well, and decant into the tared dish. Pass the ether contained in the third separator through the first and second and add to the contents of the dish. Evaporate the solvent in a current of warm air or on a water bath at 30° C., and dry the residue over sulphuric acid during twelve hours. The weight, less tare of the dish, is the amount of emetine obtainable from the volume of ipecac solution submitted to the assay.

While four washings with ether by decantation will still leave in the alkaloid solution a quantity of ether-soluble matter which is not emetine, the amount is so small that it may be neglected. In one careful trial, in which the alkaloid was freed from this impurity by shaking back again from ether to aqueous solution and then into a second ether solution, the yield of alkaloid was exactly the same as obtained by the assay process, while the residues were estimated to contain respectively 99.4 and 98.6 per cent of pure emetine.

Two extractions of the ether washings with 5 C.c. each of acidulated water are ample. In a series in which they were tested, a third washing gave a turbidity but not a precipitate with an excess of potassio-mercuric iodide, a very sensitive reagent for emetine.

The volume of solution, as prepared for precipitation,

* Paper presented at the annual meeting of the Amer. Pharm. Association at Old Point Comfort.

† Paper read at the annual meeting of the Amer. Pharm. Assoc. at Old Point Comfort.

should be about 15 to 18 C.c. If it is much more, a small part of the alkaloid will fail of extraction, unless a fourth portion of ether be used; while if it is less than 15 C.c., a substance other than emetine, thrown out with it, will assume in many cases, though not in all, a coherent extractive-like condition, and prevent the ether from taking up all the alkaloid. In one trial, in which precipitation of the undiluted aqueous solution was attempted (5 C.c. representing about 7 Gm. of ipecac), the emetine obtained was but 70 per cent of that known to be present. If the solution be diluted until 3.5 to 4 parts equal 1 part of ipecac, the non-alkaloidal substance will go out in a finely divided, rarely coherent state, and the alkaloid can be separated from it completely by the shaking with ether.

In making the precipitation the volume of ether ordered should be added first, in order that the two liquids may be shaken together the instant that the alkaloid passes from aqueous solution. This shaking should be rather a rolling of the fluids together, as by a circular horizontal motion; and should never be a violent churning, as in that way an obstinate emulsion may be formed. At best, emulsifying will occur to some extent, but the alkaline washing water, when well shaken with the intimate mixture of ether and extractive solution, will usually cause them to separate completely. The washings with alkaline water should be continued until the last addition comes off quite colorless.

Evaporation of the ether solution is best done in a dish in an air bath at 40° to 50° C. If done on a water bath, the operation involves a constant fanning of the surface of the solution to prevent its creeping over the rim of the dish. When the solvent has nearly vaporized, the dish should be rotated and inclined in such a way as will get the residue in a thin and nearly uniform layer. Without this manipulation the alkaloid will oftener be left in a narrow and thick ring, which will require several times the prescribed twelve hours for drying to nearly constant weight, and will require many days over sulphuric acid before the weight is perfectly constant.

In making weighings no precautions are necessary, as, aside from acquiring a yellow color, the alkaloid, if obtained from well-washed solutions, is permanent in the air, not increasing perceptibly in weight upon ten days' exposure in a moist summer atmosphere.

It is next necessary to determine the purity of the residues weighed as emetine. In twenty residues all but two were perfectly soluble in a dilute acid to a clear fluid, and these two left a film, scarcely weighable, the solutions being quite clear. The method used rests upon the power of the alkaloid to form with acids neutral salts, the quantity of alkaloid in a residue being calculated from the quantity of acid saturated by it. One-fiftieth normal sulphuric acid is the most convenient standard acid solution. A solution of purified litmus coloring is a good indicator (Sutton's "Handbook Vol. Anal.," p. 31 [c]).

As the emetine solutions in the standard acid are always yellowish, the change from acid to alkaline reaction, as the excess of acid is saturated by $N\frac{1}{50}$ soda, is not easily seen, and is best observed by having two solutions equally tinted by litmus.

The beginning of alkalinity is shown by a slight darkening of the fluid and production of a peculiar greenish tint, not to be described, but readily seen by placing alongside the unaltered comparison liquid. With this aid titration will usually be correct to 0.1 C.c., or within 0.2 C.c.

In the manner described seven emetine residues were saturated by standard acid, the quantities being given in the following table:

Number.	Alkaloid.	C.c. $\frac{n}{50}$ Sulphuric Acid.
1	0.1146	21.2
2	0.1432	27.75
3	0.1027	20.10
4	0.1405	27.5
5	0.0963	18.9
6	0.0716	13.9
7	0.0715	14.0

On referring to the more accessible sources of information, the following formulæ for emetine are found: Pharmacographia, Flueckiger and Hanbury: Reich, $C_{30}H_{38}N_2O_5 = 378$; Lefort (1869), $C_{30}H_{44}N_2O_8 = 560$. National Dispensatory: Lefort & Wurtz (1877), Ann. Ch. and Phys. (5) 12, 277, $C_{28}H_{40}N_2O_8$ 484. U. S. Dispensatory: Glenard, Ann. Ch. and Phys. (5), 8, p. 233, $C_{15}H_{22}NO_3 = 248$. Kuntz, Archiv der Pharmacie (3), 25, 461, $C_{30}H_{40}N_2O_5 = 508$. Watt's Dict. Chemistry (1889), observer not named, $C_{30}H_{40}N_2O_8$ (?) = 508.*

The quantivalence of the alkaloid is not stated; but, whether monad or dyad, these molecular weights vary so much that no selection is possible. Recently, however, the molecule has been shown by Blunt (Ph. Jour. (3), 20, p. 809) to be dyad.

To determine the ratio between an acid and the alkaloid, and, therefore, to approximate the molecular weight sufficiently to make a choice among those given above, the neutral sulphate was made and tested as detailed below:

From an aqueous solution of an alcoholic extract of ipecac, rendered alkaline by sodium carbonate, the alkaloid was taken up by ether; from the ether solution, after washing twice with half a volume of water rendered alkaline by sodium carbonate, it was extracted by 2-per-cent sulphuric acid in excess, and again from the aqueous solution, after repeated washings with ether, by sodium carbonate and ether. The last ether solution, after several washings with water made faintly alkaline by ammonia, yielded the alkaloid as a nearly colorless, amorphous residue. This was dissolved in a very slight excess of 10-per-cent sulphuric acid, the excess exactly saturated by sodium carbonate, and the solution evaporated to dryness at 40° to 50° C. The dry sulphate was next dissolved in hot absolute alcohol, to form a 10-per-cent solution, leaving the small quantity of sodium sulphate, and filtered after cooling.

As emetine salts are amorphous, and have no fixed limit of solubility—evaporated solutions leaving an extractive-like mass—recourse was had to ether, in which the sulphate is as good as insoluble, to separate the small amount of either free emetine or free sulphuric acid possibly present in the alcoholic solution.

Eight volumes of stronger ether (containing about 96 per cent of absolute ether, the remainder being mainly alcohol) were poured carefully over the alcoholic solution and the two liquids mixed by violent shaking. The very voluminous precipitate was washed with ether, once by decantation, using 10 volumes, and, after collecting in a funnel, with about 20 volumes in small portions. Exposed to air, the washed precipitate contracted to a very small bulk, and when sufficiently dry formed a powder which much resembled resin of jalap.

(A) The dry powdered salt was given two emetine estimations, and the alkaloid determined by drying to a constant weight at 100° C. in a current of dry air:

(1) 0.1136 salt gave 0.0890 emetine = 78.35 per cent.
(2) 0.1408 " " 0.1103 " = 78.34 "
(3) 1.0488 " lost 0.0682 at 100° C. = 6.50 "

If calculated to anhydrous salt:

(1) Emetine 83.78 per cent. (2) Emetine 83.79 per cent.

(B) Salt used in (A), dried during three days over sulphuric acid (the very hygroscopic powder kept in a weighing tube), was given one emetine estimation; water was estimated as before, and sulphuric acid determined in about 0.500 of salt in 100 C.c. of water.

(1) 0.1008 salt gave 0.0820 emetine = 81.35%.
(2) 0.5090 " " 0.1910 $BaSO_4$ = 0.080335 H_2SO_4 = 15.78%.
(3) 0.5174 " " 0.1930 " = 0.8117 " = 15.68%.
(4) 1.0118 " lost 0.0312 at 100° C. = 0.308%.
Calculated to anhydrous salt, (1) emetine, 83.93 per cent.

(C) Salt dried at 100° C. in a current of dry air to constant weight. At 120° C. this product lost 0.6 per cent, but became tinted pale reddish, apparently slightly decomposed.

(1) 0.1450 salt gave 0.1214 emetine = 83.72%.
(2) 0.5140 " " 0.1979 $BaSO_4$ = 0.08324 H_2SO_4 = 16.20%.

RELATION OF ACID TO ALKALOID.

(B) (1) Emetine, 81.35 per cent. (2) H_2SO_4, 15.78 per cent.
(B) (1) " 81.35 " (3) " 15.68 "
(C) (1) " 83.72 " (2) " 16.20 "

15.78 = 81.35 = 98 = 505.3
15.68 = 81.35 = 98 = 508.4
16.20 = 83.72 = 98 = 506.5

These figures point to the formula of Kuntz, $C_{30}H_{40}N_2O_5 = 508$, as being the correct one, and certainly prove that the molecule is dyad, confirming the statement of Blunt, previously cited.

If this formula be accepted, the salt used in the second series of estimations, (B), probably has the following composition: $C_{30}H_{40}N_2O_5.H_2SO_4.H_2O = 624$.

	Calculated.	Found.
$C_{30}H_{40}N_2O_5$	81.41 per cent.	81.35 per cent.
H_2SO_4	15.705 " "	15.73 " " (mean).
H_2O	3.885 " "	3.08 " " "
Total	100.00 " "	100.16 " " "

and that used in the third series (C): $C_{30}H_{40}N_2O_5.H_2SO_4 = 606$.

	Calculated.	Found.
$C_{30}H_{40}N_2O_5$	83.83 per cent.	83.72 per cent.
H_2SO_4	16.17 " "	16.20 " "
Total	100.00 " "	99.92 " "

Returning now to the weight of the emetine residues and the volumes of $N\frac{1}{50}$ sulphuric acid saturated by them, it will be seen that, with the emetine molecule surely dyad, 1 C.c. of the standard acid neutralizes 0.00508 of al-

* To these may be added Dragendorff (Die qual. und quant. Analyse von Pflanzen, etc. [1882], page 57,: $C_{30}H_{38}O_5 = 2H_2O$.—Ed. Am. Drugg.

kaloid. On this basis the quantity of emetine in each residue is calculated, and the percentage of pure alkaloid found therefrom. As the experimental error is about 0.5 to 1 per cent, the fractions in the last column of the following table should not have too great a value placed upon them:

No.	Alkaloid Residue.	C.c. $\frac{N}{50}$ H_2SO_4	Emetine indicated.	Per Cent in Residue.
1	0.1146	21.2	0.107696	94.0
2	0.1432	27.75	0.14097	98.4
3	0.1027	20.1	0.102108	99.4
4	0.1405	27.5	0.1397	99.4
5	0.0963	18.9	0.096012	99.7
6	0.0716	13.9	0.070612	98.6
7	0.0715	14.0	0.07112	99.4

So far as the quality of the product goes, the assay process stands approved and is apparently trustworthy.

Evidently, instead of weighing the residue, the process may be amended by dissolving the alkaloid in an excess of standard acid, or, if sodium carbonate be used as precipitant, by evaporating the ether solution in presence of an excess of standard acid, in either case the excess being titrated by $N_{\frac{1}{50}}$ alkali. In this way the quantity of pure emetine is obtained at once and there is avoided the tedious drying over sulphuric acid. For assay purposes the drying is sufficiently done at the end of twelve hours, provided the residue is spread evenly in a thin layer, but for accurate analyses it will require fifty hours at least, and often half as much more. However, present experience with the alternative method is not sufficient to recommend it here; and even should it prove equal to the gravimetric process, it will remain subject to the disadvantage that there are many who cannot use it well through inability to distinguish colors sharply.

It remains to acknowledge aid as well as information from papers by the following authors: Cripps & Whitby, *Pharm. Journ.* (3) 19, p. 721; Blunt, *Pharm. Journ.* (3), 20, p. 809.

CINCINNATI, July 27th, 1890.

What Amount of Sand is Present in Commercial Asafœtida?*

BY W. A. PUCKNER, CHICAGO.

IN approaching this query, which appeared simple and easy, an obstacle was encountered from the absence of authoritative statements in regard to the mineral constituents of the natural substance, and I was also somewhat puzzled over the word sand itself. Webster and Worcester define the word, but not in such a way as to give the analyst any help in the determination of it. The latter states that it is composed of minute grains of stone, or small particles of quartz or other stone not cohering together. In Sachs' "Agricultural Chemistry" it is said to consist of "loose, non-cohering grains of quartz, of quartz and feldspar, or of other minerals."

It occurs to me that a better form of the question would be directed to the proportion of ash—a fact easily determined, and which would afford, after a sufficient number of determinations had been made, a standard of comparison of some value, and which would be easy of application.

In regard to authorities on the mineral constituents of asafœtida, Pelletier is quoted in the U. S. D. as finding traces of the acid malate of calcium. Brandes finds 6.2 per cent of calcic sulphate, 3.5 per cent of calcic carbonate, 0.4 per cent of oxide of iron and alumina, and 4.6 per cent of *impurities*, consisting chiefly of sand and woody fibre. Maisch, Proc. Amer. Pharm. Association, 1871, reports 57, 44, 15, 51, and 62 per cent ash, consisting chiefly of $CaSO_4$, in specimens examined by him. Both the German and British pharmacopœias limit the ash to 10 per cent, without defining its composition.

Under these circumstances I thought it best to determine carefully the quantity and quantitative composition of the ash in the specimens at hand, and disregard the query itself; hence the proper title of this communication would probably be "A Note on the Constituents of Asafœtida."

The following is the method adopted: A weighed quantity of a representative sample of the drug was dried in an air bath until it could be reduced to a fine powder; the loss of weight was noted, and 2 or 3 Gm., calculated to weight of the original sample, taken for analysis. This was first extracted with alcohol in a Soxhlet extractor, and from the requirement of the U. S. P. that 60 per cent should be soluble in alcohol, the loss under this treatment was noted. As the substance, after extraction, was dried at 100° C. and then weighed, the figures given in this paper give the amount soluble in alcohol plus the water contained in the original sample, as I inferred that the standard of 60 per cent refers to the air-dry substance. The residue from alcohol extraction was then slowly ignited in a shallow platinum capsule, and this residue designated as ash. The ash obtained was not a fixed quantity, as the organic matter present reduced a portion of the calcic sulphate to the sulphide. The ash was treated with hydrochloric acid and water, the residue again united and weighed as "insoluble ash." In the soluble portion alumina and iron were determined as oxides, calcium was precipitated as oxalate, dried in a Gooch filter at 100° C., and calculated as $CaC_2O_4.H_2O$, and magnesium determined as pyrophosphate. Carbonic acid was determined by the method of Rose (absorption by caustic alkali). Sulphuric acid was determined by extracting a fresh portion with alcohol, treating residue with dilute hydrochloric acid, evaporating, and treating with HCl and $KClO_3$ to destroy organic matter, then precipitating with baric chloride. The baric sulphate was separated with a Gooch filter, dried at 130° to 140° C., and weighed.

	Soluble in alcohol.	Total ash.	Insoluble ash (earth, clay, sand, etc.).	Alumina and iron.	CaO.	MgO.	SO_3.	CO_2.
No. 1 in mass	9.49	19.45	2.32	1.16	7.12	1.14	8.57	1.09
No. 2 in mass	27.39	56.03	1.37	.42	25.07	2.03	20.49	10.78
No. 3 powdered	44.48	38.59	2.36	.68	16.57	1.39	16.18	5.32
No. 4 powdered	33.47	47.86	1.95	.60	18.85	.42	23.51	2.62
No. 5 powdered	31.35	55.38	21.96	2.57	9.91	6.49	8.96	4.25

Silica found—not determined.

Of the two specimens of lump asafœtida, No. 1 was dark and irregular, hard and dry portions intermixed with softer parts, while No. 2, bought as of extra quality, was of a lighter color and homogeneous throughout. The former gave 19 per cent while the latter showed 56 per cent of ash, of which about 34 per cent was calcic sulphate and 19 per cent calcic carbonate. Of the specimens of powdered gum, No. 3 was obtained of a Chicago drug house, No. 4, with its 47 per cent of ash containing 40 per cent calcic sulphate, was purchased of a New York jobber, while No. 5, containing 55 per cent of ash, bore the label of a drug miller claiming it to be a *purified* gum.

CHICAGO COLLEGE OF PHARMACY.

Albuminate of Iron and its Preparations.*

BY DR. ADOLPH TSHEPPE.

ALBUMINATE of iron was introduced as far back as 1877, by Dr. Friese, and has been the object of investigation and discussion by a number of able writers at home. But altogether such flagrant discrepancies are still existing between formulæ, constitutions, and appellations of these preparations that the subject to-day is far from being exhausted or the question settled, and the old quarrels might be renewed on the slightest provocation.

In this country, to my knowledge, so far, they have received no serious attention, and I hope, by introducing this theme to this body, to promote acquaintance with the subject, and, by experiences gained in its study, to help to diffuse the knowledge so that further investigation and discussion may be invited.

It is a good many years now since it has been discovered that some organic acids, like the citric and tartaric, prevent the precipitation of ferric hydrate by potassa; and that this property is not confined to bodies of a decided acid nature, but is also shared by some indifferent bodies, like sugar, has been known long enough to have a formula for soluble saccharate of iron introduced in the first edition of the German Pharmacopœia. This preparation, according to the official formula, is obtained by a rather devious route, which may be greatly simplified; but other analogous substances, like dextrin, gum arabic, glycerin, albumen and its derivatives and congeners, do not show such difficulties as sugar, and the working of the chemical transformation with them is more translucid. Solutions of these bodies in mixture with ferric salts give on neutralization a precipitate which constitutes a chemical combination of the substance employed with iron; a further addition of alkali redissolves the precipitate, the alkali now entering into the combination.

Before solution in alkali, the precipitate may be freed of the by-products of the chemical exchange by straining and washing with water, before the addition of the alkali, in order to obtain the final product in a state of purity. The same may be attained by subjecting the alkaline solution to dialysis.

The precipitate, except in the case of albumen, is also soluble in diluted acids, but this solution only represents again the original mixture.

In place of the normal ferric salts, basic ferric salts may be employed, which behave the same as the normal; only

* Paper presented at the annual meeting of the Amer. Pharm. Association, September, 1890.

* Abstract of a paper read at the meeting of the American Pharmaceutical Association at Old Point Comfort, Va.

The author's paper contains some important facts regarding the nature, properties, and reactions of albumen and pepsin. In order to facilitate reference to this portion of the paper, we have made it a separate article, with the title "Notes on Albumen and Peptone," for which we have the author's consent.—ED. AM. DRUGG.

as it is the acid of the ferric salt which is replaced by the substance used, the new compound will contain a larger amount of iron than those obtained from the normal salts.

These basic iron combinations seem to be even more stable than the normal combinations, and are produced generally when an appropriate substance, being a crystalloid, is mixed with normal ferric chloride, and potassa gradually introduced. By this slow manner all the iron is first transformed into basic ferric chloride before the combination with the substance is effected; glycerin and sugar form typical examples of this behavior, and the modus operandi of the preparation of the saccharate of iron adopted by the German Pharmacopœia clearly points to the fact that a basic saccharate is either aimed at or unintentionally obtained.

Colloids like albumen, dextrin, or gum acacia prevent the formation of a basic iron salt. The albuminate is directly precipitated on addition of alkali to saturation of the acid, showing that a combination is formed having the constitution corresponding to the normal ferric salts.

But if in the case of crystalloids the manner of addition be reversed, adding the iron mixture to an excess of alkali, a solution corresponding to the constitution of the normal salt is also obtained.

This procedure is not admissible in all cases, as iron hydrate may be precipitated in place of the expected compound. But the normal form may also be obtained from the alkaline solution, prepared as before, by precipitation by acids or more certainly by dialysis.

The passage of the normal to the basic salt may be judged by the change of color of the solution, which passes from that of pale sherry to that of old port.

The percentage of iron in these compounds is obviously not constant. For albuminates the amount of iron oxide obtained by calcination of the dried precipitate of the albuminate varies from $\frac{1}{12}$ to $\frac{1}{4}$ and all the intermediate fractions, according as the normal or basic chloride or mixtures of both be employed.

But it may vary still more. Alkaline solutions may contain a large excess of albumen, acid mixtures an equally large excess of basic iron. The excess of albumen is not eliminated by precipitation, as is the case with sugar or glycerin, because it is changed in this process into a derivative, which is itself precipitable.

For a specific solution of a ferric salt, the variation of percentage of iron in the compound is a small one, and the proportion in which an appropriate substance combines with the iron of this specific solution may be satisfactorily ascertained.

This determination is effected by gradually adding to a measured volume of a 1-per-cent solution of the substance to be tested, measured volumes of an equally diluted solution of ferric chloride, adding after each trial sufficient surplus of caustic alkali. Between the additions a sample is withdrawn for test. The limit of addition is reached when ferric hydrate is precipitated, then the proportions of the volumes of the two solutions indicate the ratio in which the substance in hand combines with ferric chloride.

One part by weight of the following named substances was found to combine with the following parts of solution of ferric chloride, U. S. P.:

Glycerin	0.92
Cane Sugar	0.42
Mannite	1.72
Egg Albumen	1.05

The proportion of basic chloride of iron (*i.e.*, dialyzed iron) in solution of usual strength (5 per cent of Fe_2O_3) was $7\frac{1}{2}$ to $8\frac{1}{2}$ parts by volume to 1 of albumen.

The conditions to form this soluble iron compound depend as well on the chemical constitution of iron salts as on that of the organic substance. For iron it is required that the salt be a ferric compound, and that the iron be precipitable by alkali in the state of hydrate, and that the combination be effected while the ferric hydrate is in the nascent state.

Therefore, *the organic compound must be present before*, and, contrary to statements, I never found already precipitated hydrate of iron to dissolve in sugar or any other indifferent substance. As ferric salts, the chloride, sulphate, or nitrate may be employed, the phosphate or the alkali combinations of organic acids with iron being excluded. . . .

Most of the reactions named belong in common to albumen, and all the other indifferent bodies mentioned. But with albumen the reaction becomes more complicated through reaction belonging to albumen itself. . . .

If alkali be added to an albuminous precipitate for the purpose of solution, a proportion of alkali insufficient for solution of the whole does not dissolve a proportionate part of it, as might be expected from experience with inorganic bodies. The coagulum swells up, becomes a jelly, and finally dissolves to a perfect solution only when the adequate amount of alkali required for its solution has been added. If alkali be added in the same manner to a precipitate of ferric albuminate, the addition of an insufficient amount may have the disastrous effect of decomposing the compound by extracting albumen; so that when finally the full amount of alkali has been added the compound is so decomposed that albumen only goes into solution, leaving the iron behind as ferric hydrate. Quantities of material, and much labor, may be wasted by ignorance or non-observance of this rule.

Not only albumen, but also the other substances mentioned, are subject more or less to this conformity, each showing an individualism demanding a modification of the general treatment outlined. The existence of such individual characteristics may be illustrated by treating mixtures of sugar or glycerin and ferric chloride with alkali in different modalities.

From a solution of cane sugar and iron no precipitate is obtained if a surplus of potash be added at once; the solution contains the soluble saccharate of iron and potassium; but if the same amount of potash be added in drops, as is done if dropped from a burette, ferric hydrate is precipitated and no soluble compound is formed. The same casualty does not occur with glycerin. With iron a soluble compound is formed if the solution of iron chloride be dropped into a mixture of alkali and sugar, while the same proceeding forbids itself if tried with glycerin.

A consideration of the foregoing statements will now enable us not only to understand the theory of the formation of albuminate of iron, but also to intelligently judge the formulæ and preparations of the market, and enable us also to formulate the existing relations and conditions into such shape as to obtain preparations of any desired constitution and strength, be it to embody a real chemical compound or a compound only in pharmaceutical parlance—a mixture, or concoction.

Before all it must be admitted that there is no peptonate of iron possible as a chemical compound. If the term albuminate implies the meaning that albumen acts as the acid radical of the combination, then the same generic appellation applied to peptone should also imply the assumption of the same functions by the peptone. But the formation of a compound with iron, unexpected as it may be, does not take place with peptone. The want of forming a precipitable compound might be explained by its failure to give precipitates of its own on change of reaction, as is the case with all other albumin derivates. But if taken into consideration that we have the same indifference in glycerin also, it must be the want of chemical affinity rather than physical imperfection which causes this indifference of peptone towards iron.

In a mixture of peptone and a ferric salt, only hydrate of iron is precipitated on neutralization; no soluble compound is formed. In a mixture or pharmaceutical compound of peptone and oxychloride of iron, whatever there is of acid radical is that supplied by the iron solution beforehand, and to name such a mixture "peptonate of iron" implies a misapplication of title. The two components in relation to each other are co-ordinate, and the title should read "solution of iron and peptone." But if, in preparations so named, it is found that they contain albumen and no peptone, the otherwise wrongful appellation takes the character of a misrepresentation.

But the name of peptone is especially captivating and worth while saving, in this age of advanced knowledge, especially with physicians who know enough of peptone to transmit its own supposed properties to that of peptonate of iron, which, thus endowed, could also be supposed to pass the trying ordeal of the complicated laboratory of digestion, pass the final membranes which separate the digested matter from the fæcal mass, to be absorbed, resorbed, and assimilated in its totality, hoof and all, untouched, undecomposed.

This would be a dream. For if the peptonate was possible in its present association, with basis in dialyzed iron, it would not diffuse. Dialyzed iron has the name of dialyzed iron because it does not dialyze.

But this iron preparation as it is, divested of its fanciful name, is good enough, and better than many others. Experts in pharmacology found it so; so the public finds it. And an enchanting title is of infinite magnitude, commercially. It helps to sell. It sells a book. The plot need not be true, but plausible; and the success prompts a host of imitators to imitate.

As a proof of the assertion that these specialties are albuminates and not peptonates, the fact that they yield a precipitate on neutralization with alkali, and redissolve again in an excess, should suffice. The fact that the precipitate obtained now from the alkaline solution does not dissolve in dilute acids, strengthens the proof beyond doubt. . . .

Throwing the peptonate of iron out of further consideration, there are only albuminates left for further treatment, of which there is only the alternative of the alkaline normal albuminate prepared from normal chloride, and that of the alkaline basic albuminate prepared from ferric oxychloride. . . .

The alkaline solution of normal albuminate is represented by the "Liquor Ferri Albuminati," Drees, who also established the first formula for its preparation. It is a true chemical compound, the soluble alkali compound of the insoluble ferric albuminate.

This solution is prone to decompose through atmospheric influences, by attracting from it carbonic acid. It is not, however, as stated, the transformation of its alkali into alkali carbonate which causes the downfall of the

iron (and of the preparation too), for carbonates may be employed as well for preparing the solution; but it is the formation of bicarbonate, which is devoid of the faculty to dissolve, or keep the iron in solution.

This preparation, again contrary to printed statements to this effect, spoils the quicker the better it is made pharmaceutically, that is, the less surplus of alkali has been used for its solution.

Of the alkaline iron albuminate the dry preparation cannot be made by the usual evaporation on the water bath, although it stands boiling without coagulation on evaporation; skin after skin is formed on the surface, as in milk, whose constitution as an alkali-proteïd is not dissimilar. The final residue is insoluble. It may be expected that evaporation in vacuo may produce a similar soluble dry product to that obtained from milk.

Of the alkaline basic albuminate there is no representative amongst the preparations actually made. E. Dieterich gave a formula of which an important simplification may be found in the following lines:

To prepare a solution of normal ferric albuminate, a mixture of proper proportions of solutions of albumen and ferric chloride is neutralized by alkali. Ammonia or the hydrates of fixed alkalies answer as well, the carbonates of the latter being only impracticable by the large evolution of gas, which causes the albuminous solution to foam excessively. Litmus paper as a guide in the precipitation is excluded, as the precipitation is the most perfect when the liquid shows yet slightly acid reaction. But the formation of the precipitate is the best indicator itself to show its completion, for the precipitate, being creamy at first, becomes flocculent, and on further addition of alkali congregates in large flocks, which subside from the clear liquid, which, if the proportions were well chosen, contains neither iron nor albumen. At this stage the solution of alkali chlorides drains off rapidly on muslin, while an imperfectly precipitated solution shows the imperfection, may it consist in too little or too much addition of alkali, by refusing to drain off. After washing, the precipitate is dissolved by alkali. To insure solubility it is better to add the precipitate to the alkali than to reverse the addition.

Solutions of the basic albuminate of iron may be more simply made. Considering that for each molecule of ferric chloride 6 molecules of alkali chloride are formed, the elimination of this large amount of salt is of paramount necessity in the preparation of ferric albuminate from the normal chloride. But with employment of oxychloride, which requires only $\frac{1}{20}$ part of alkali, or less than the normal chloride, for its neutralization, the washing of the precipitate may well be dispensed with, the more as a thorough washing diminishes the chances of its solubility. As the same contingency also rests with the precipitate obtained from normal ferric chloride, the probabilities are that, if the entire amount of these by-products be left in the final solution of basic albuminate, the contamination will be not more but less than in the former, where such ablution was imperfectly performed. If precipitation be deemed a superfluous proceeding, the preparation of this form of albuminate narrows down to the mixing of specific quantities of albumen and ferric oxychloride in admissibly diluted solutions, and to dissolve the resulting magma by alkali, as stated before.

To form pharmaceutically perfect preparations from these chemical solutions, they are mixed with 5 to 8 per cent of alcohol and properly aromatized. The alcohol is necessary to preserve them.

The proportions in which the components combine may be calculated from data furnished above; practically they are elastic enough for a great divergence, as demonstrated by the various formulæ given, provided there be a sufficiency of albumen. I do not intend to submit a specific formula, for it would have to be agreed upon first, and I am of the opinion that the accepted strength of the imported preparation is too low for American usage. Besides, this standard has to be fixed on the amount of iron, and not on that of the precipitable albuminate compound, which is too variable to admit of its use.

I think it proper to reserve that for the National Formulary, for the sake of uniformity. This investigation had been begun in its interest, and an expansion of it in the shape of an appendix will be timely, especially after the revision of the U. S. Pharmacopœia has been completed.

Of the mixtures made with albumen and oxychloride of iron, there are as representatives the imported preparations known by the fanciful appellation of peptonates of iron. They contain respectively 0.42 and 0.46 per cent of iron, or nearly 0.6 per cent of hydrated oxide, and equal in strength 10 drops of tincture of iron U. S. P. in a fluidrachm. The precipitate obtained from the preparation by neutralization, best with carbonate of ammonium, consisting of ferric albuminate, weighs three times as much as the ferric hydrate obtained by boiling a sample with strong potash lye, or four times as much as the ferric oxide obtained by calcination of the hydrate of iron previously obtained, or by incineration of either the precipitate of ferric albuminate or the dry residue of the original preparation.

They contain 5 and 8 per cent of alcohol, said to be in the form of brandy, and one contains 2½ per cent of sugar. The specific gravity is nearly that of water, and less in one of the specialties. Their acidity is very small; proportionate to the quantity of dialyzed iron contained therein, it corresponds to 2.5 C.c. of normal potassa for 100 C.c. On addition of minimal portions of alkali they readily change their reaction, forming again perfect solutions. They stand boiling without change, as the albumen is in the state of acid albumin, and mix with alcohol for the same reason. Concentrated acids precipitate both the oxychloride of iron and the albumen. Dialysis reveals nothing.

Chloroform Water as a Preservative.

At the recent meeting of the British Pharmaceutical Conference, Mr. Jos. F. Burnett read a paper on this subject, in which he stated that for the keeping of various chemicals in solution, so as to be convenient in rapid dispensing, nothing that he had tried was so effective and at the same time so free from objection as chloroform water. It is not needed for the solutions of inorganic substances, such as potassium bicarbonate, magnesium sulphate, potassium bromide, etc., which are kept in most dispensing establishments.

The advantage is evident in the case of solutions of organic chemicals which are prone to decompose, ferment, etc., through the presence of fungoid organisms. The following is a list of those which the author regularly keeps made, in each instance solution being effected by dissolving the substance in B. P. chloroform water, and adjusting to the required strength by the final addition of more chloroform water: Citric acid, 1 in 2; potassium acetate, 1 in 2; potassium citrate, 1 in 2; citrate of iron and ammonia, 1 in 2; sodium salicylate, 1 in 2; ammonium chloride, 1 in 4; ammonium bromide, 1 in 4; quinine sulphate, 1 in 10 (by the aid of a sufficiency of dilute sulphuric acid).

Never in any of these is there any fungoid growth, even though they are kept in the varying temperatures of summer and winter for months. Two mixtures which are of equal convenience—viz., powdered rhubarb and aromatic powder of chalk—rubbed down with chloroform water (1 in 8) keep well. Mucilage of acacia made with chloroform water keeps indefinitely.

There can be no drawback to the use of chloroform water as a preservative, for the addition of 1 or 2 drachms, or even an ounce or two, to a mixture cannot have any injurious effect on the patient. None of the medical men for whom the author dispenses object to the addition.

The author next speaks of the value of the preservative in keeping infusions and decoctions. These preparations are, however, so little used here that we omit this portion.

On the same subject another paper was presented by Mr. Wyatt.

Mr. Wyatt's experience is much akin to Mr. Burnett's. Dispensing stock mixtures and solutions made with chloroform water in the proportion of 1 in 4 in the case of inorganic salts, and quinine, morphine, and other alkaloidal salts, in chloroform water alone remain clear and devoid of fungoid growth under conditions which would necessitate the use of at least 25 per cent of proof spirit for their proper preservation.

The action was specially observable with an extract of ergot mixture containing solution of strychnine, which was kept concentrated, but did not keep four days free from mould and trimethylamine odor until chloroform water was used to make it. With this it kept good for three months. The author then proceeded to state that fruit juices keep very well with chloroform added in the proportion of 1 part in 600, the aroma being rather improved than otherwise by the addition, at any rate in the case of raspberry, lemon, and blackberry juices. A sample of raspberry juice was submitted which was prepared by allowing the fruit to stand in a lightly covered jar for about a week, during which time a slight fermentation was set up, the juice sinking clear and the aroma improving. Since July, 1886, the sample has in no way deteriorated. Chloroform is also a great success with essence of rennet, which when preserved with it never acquires the slightest unpleasant odor; but it has no effect on cucumber juice except when 1 to 4 of glycerin is added along with 1 part of chloroform in 600. It is also very good for aqueous solution of opium.—After *Chem. and Drugg.*

A Simple Filter for Small Quantities of Liquid.

Take a glass tube, about ¼ inch diameter internally, grind off one end quite true, and attach to it a little disc of stout filtering paper moistened with a drop or two of pure water. The glass tube is, of course, to be perpendicular to the surface of the disc.

When a small sample of a liquid is to be filtered off, for instance, from a liquid containing a precipitate suspended therein, insert the end of the tube bearing the filter paper into the turbid liquid, and carefully and gently apply suction until a sufficient amount of the filtered liquid has risen in the glass tube.

This contrivance answers well, for instance, in the volumetric determination of sulphuric acid.—After *Chem. Zeit.*

Salol-Collodion.

IT is recommended in the *Répertoire de Pharmacie* for July 10th, 1890, to dissolve 4 parts of salol in 4 parts of ether, and then add to 30 parts of collodion, and it is stated that the application of the salol-collodion to the affected parts in acute rheumatism will be followed by rapid relief of pain.

Antipyrin in Tin Boxes.

SOME antipyrin purchased in January in original 250-Gm. tin cases, when opened in June showed, according to Mr. Grüner, wherever the compound had come into direct contact with the tinned sides of the case, a striking reddish-yellow coloration (*Zeit. österr. Apoth.-Ver.*, June 10th, p. 301). A chemical examination showed the preparation to be otherwise faultless. It was neutral in aqueous solution, odorless, behaved normally towards all reagents, and melted at 112° C. The antipyrin in the cases opened in January was without defect, and some which had been preserved since that time in glass had remained quite white. Mr. Grüner therefore recommends that manufacturers should use glass for packing antipyrin.—*Pharm. Journ.*

The Constituents of Sassafras Oil.

SASSAFRAS oil is, according to the text books, a mixture of 10 per cent of a terpene, $C_{10}H_{16}$, and 90 per cent of safrol, $C_{10}H_{10}O$. Since Grimaux and Ruott's investigation there has always been a suspicion that the oil also contains a small portion of a phenol body; but this has not been satisfactorily demonstrated until lately. Dr. C. Pomeranz, during a recent investigation (*Pharm. Post*), treated 3 kilos of the oil with alkali, and, separating the alkaline solution, treated it with sulphuric acid, and dried the brown oily body which came out with calcium chloride, afterwards submitting it to fractional distillation. Thereby he obtained, at 246° to 247° C., 7 Gm. of a colorless liquid resembling eugenol. A critical examination of this liquid resulted in the conclusion that it is identical with eugenol, $C_6H_3OHOCH_3C_3H_5$; the benzoyl derivative having a melting point of 69° C., as compared with 69° to 70° C., which is that of benzoyl eugenol.—*Chem. and Drugg.*

Cassia Oil.

AS reported by us some months ago, there has been systematic adulteration of cassia oil practised by Chinese merchants, colophony being the substance used for adulteration. According to Hirschsohn's observations (*Phar. Zeit. für Russl.*, xxix., 241), pure cassia oil dissolves in three times its volume of 70-per-cent alcohol to form a clear solution, but as little as 5 per cent of colophony added to the oil suffices to make the solution opalescent, and the opalescence increases in density as the percentage of resin is increased.

By heating to, say, 20° C., the turbidity diminishes somewhat. All the commercial adulterated specimens gave milky solutions with the alcohol.

Another reliable test is based on the solubility of essential oils in petroleum ether, a fluid which does not dissolve resin. Cassia oil dissolves completely in 3 volumes of petroleum ether, spec. grav. 0.650, and if 1 volume of the oil be shaken with 3 of the ether in a graduated tube, other essential and fatty oils, resin and kerosin, if present, will separate, and the amount may be read off. The ethereal solution of the oil shaken with oxyhydrate of copper for a minute, and filtered, should not acquire a green or blue color, which it would have if the oil contained either colophony or resin.—*Chem. and Drugg.*

Antipyrin.

IT may interest our readers to learn where this article, now so much employed in medicine, is obtained. There are four firms now engaged in its manufacture, the original German, two French, and one Swiss. It was originally discovered by Dr. Knorr and manufactured by his process at the color works at Hoechst-on-the-Main, formerly Meister, Lucius & Bruening, and it is from that firm that most of the article coming to the United States is derived. A French firm, the Société Parisienne des Couleurs, at Creil, also manufactures exactly according to Dr. Knorr's process, but exports but little as yet. Another French firm, Mialhe—A. Petit, successeur—at Paris, manufactures the same article and sells it under the name of Analgésin. In addition, the Baseler Gesellschaft, at Basle in Switzerland, also manufactures antipyrin largely. The product of all four factories is identical in medicinal properties and in behavior to reagents. The product of the factory at Creil is perhaps not quite so well purified as the other three, for it turns yellow when exposed freely to light, while the other three remain white and correspond exactly to all the tests of purity required by the new Austrian Pharmacopœia, which has adopted antipyrin into its code. The new official supplement to the English Pharmacopœia also accepts the new remedy, while our own Pharmacopœia is forbidden to receive it, because it is made by a patented process.

[*Note by Ed. Am. Drugg.*—The above note is based on information kindly furnished to us by Prof. Charles O. Curtman, of St. Louis. We may add that in a recent paper on "Tautomeric Bodies" (in *Liebig's Annalen*, 258, 267), J. U. Nef renders it probable that Knorr's interpretation of the constitution of antipyrin, as phenyl-dimethyl-pyrazolon, is not correct.]

Mercuro-Chloride of Caffeine.

IN a paper read at the recent British Pharmaceutical Conference, Mr. Davies described a compound of mercuric chloride with caffeine, of the formula $C_8H_{10}N_4O_2$-H_2Cl_2, which is easily formed upon mixing aqueous solutions of the constituents. The formation of this body will serve, he suggested, as a confirmatory test for caffeine, as the delicacy of the reaction appears to be considerable.

With a solution of caffeine of the strength of 1 in 1,000, abundant crystals are formed a short time after it has been mixed with a saturated solution of mercuric chloride. The reaction is shown by the citrate as well as by the alkaloid. The compound formed is much more soluble in water than in a solution containing excess of the mercury salt. Hence it is advisable to use a saturated solution of the latter when testing for caffeine by this means. The double chloride is also much more soluble in hot water than in cold, and much of it crystallizes out from a hot solution on cooling, which fact furnishes a ready method of obtaining it in a pure form.

Mr. Davies indicated that the compound he described was identical with one mentioned in Watt's "Dictionary of Chemistry," but its production from aqueous solutions appeared to be new, and enabled the reaction to be readily utilized as a valuable confirmatory test for the presence of this alkaloid. He had made an analysis of the body and found it to yield caffeine, 40.6 per cent; mercury, 42.8 per cent; and chlorine, 15.42 per cent, which agrees pretty closely with the above formula. Some fine specimens of the compound were exhibited, and the reaction was practically shown.—After *Chem. and Drugg.*

Codeine Hydrochloride.

CODEINE hydrochloride was first prepared by Anderson by saturating hot dilute hydrochloric acid with codeine (*Annalen*, lxxvii., 348). It was obtained in white stellate-grouped needles, which were described as containing in the air-dried condition 2 equivalents of water of crystallization, of which only half an equivalent was lost at 100° C., and the remainder only at 121°. At the latter temperature, however, some hydrochloric acid was also given off, the dried residue acquiring an alkaline reaction in consequence. Professor Schmidt reports (*Apoth.-Zeit.*, July 9th, p. 366) that three commercial samples, from different sources, examined by him to see how far their properties corresponded with Anderson's statement, were all in the form of white crystalline powder consisting of fine needles, which dissolved readily in water to a neutral solution and corresponded in composition to Anderson's formula, $C_{18}H_{21}NO_3HCl + 2H_2O$.

But a remarkable difference was manifested when these compounds were subjected for four hours to a temperature of 100° C. One lost weight equal to 2.5 per cent, corresponding to Anderson's statement; a second lost 5.4 per cent, and the third 3.2 per cent. As the loss in neither case represented the 2 equivalents of water, which required 9.66 per cent, the experiment was tried whether all the water of crystallization could be eliminated by prolonged drying at 100° without involving loss of hydrochloric acid. After from ten to fourteen days the weight became constant, the total loss then amounting to 10.56 and 10.52 per cent respectively, and the composition of each sample, according to the result of a chlorine determination, then corresponded to the formula $C_{18}H_{21}$-NO_3HCl.—*Pharm. Journ.*

Codeine Phosphate.

CODEINE phosphate was first prepared by Anderson, by saturating phosphoric acid with codeine, the product having the composition represented by the formula $C_{18}H_{21}NO_3H_3PO_4 + 1\frac{1}{2}H_2O$. Two commercial samples examined gave results not agreeing with this formula or with each other, the water of crystallization in one case amounting to 7.71 per cent and in the other to 2.80 per cent, whilst the formula quoted required 6.37 per cent. Both compounds, when heated to 100° C., assumed a gray-yellow color (*Apoth.-Zeit.*, July 9th, p. 366). Three other samples were therefore obtained and examined. Sample A was a white crystalline powder, which dissolved readily in water and slightly in alcohol, with a faintly acid reaction. It lost 7.60 per cent of water at 100°, becoming gray, and when anhydrous contained 21.52 per cent of phosphoric acid, or an excess of the quantity required for

an acid phosphate. Sample B, of similar appearance, lost at 100° C. only 2.27 per cent of water, becoming less gray than A, and when anhydrous contained 17.75 per cent of P_2O_5. It corresponded, therefore, to the formula $2(C_{18}H_{21}NO_3H_3PO_4) + H_2O$. Sample C, also of similar appearance, lost at 100° C. 8.27 per cent of water, and when dehydrated contained 17.6 per cent of P_2O_5. It therefore corresponded to the formula $C_{18}H_{21}NO_3H_3PO_4 + 2H_2O$. A sample was then prepared by adding pure codeine to phosphoric acid until there was only a faintly acid reaction, and treating the clear solution with alcohol in excess. The crystalline precipitate, washed with alcohol and dried, corresponded to the formula with 2 equivalents of water, as it did also when recrystallized from water; but when recrystallized from hot dilute alcohol it was obtained in well-formed, colorless, transparent prismatic crystals, containing only 1 equivalent of water to 2 equivalents of codeine phosphate.

It would appear, therefore, that both these forms occur in commerce, as well as one containing excess of phosphoric acid.

As the codeine phosphate prepared under Professor Schmidt's superintendence did not become gray when heated to 100°, it is supposed the coloration noticed was due to an impurity.—*Pharm. Journ.*

Green Iodide of Mercury.

Messrs. W. Martindale and W. Appleton Salter, in a paper read at the recent British Pharmaceutical Conference, described a number of experiments made for the purpose of determining how this salt can be made so as to be of greater stability than the one which was removed from the British Pharmacopœia.

They found that a sample of the salt supplied to them, which kept better than any others, contained a considerable percentage of free mercury, and reference showed that the French Codex and the United States Pharmacopœia both prescribe an excess of mercury. It so happens that in France and America mercurous iodide is more extensively used than in any other country. The authors then proceeded to speak of the decomposition which occurs in the salt, mentioning different theories which have been given from time to time regarding it, and they stated that they were not favorable to the yellow iodide, although some authorities give this the preference. They had made no experiments to prove that the precipitated iodide is more or less unstable, contenting themselves with the statement that the fact is generally accepted that the yellow iodide does change to the red more rapidly than the green. It would seem, however, that most of the assertions regarding the oxidation of the green salt are much exaggerated, as the following results of analysis show:

HgI_2	Hg_2I_2	HgI_2	Hg_2I_2
A. 0.1%	= 81.6%	D. 0.26%	= 66.65%
B. 0.24%	= 83.07%	E. 0.34%	= 85.75%
C. 0.2%	= 91.62%		

The red iodide was separated with ether, and the green by solution in acid, precipitation as silver iodide, and weighing. Several of the specimens contained much free mercury, D having no less than 30 per cent. They therefore recommended that one-fourth more mercury should be used than was theoretically necessary, and that the iodine should be added gradually while the two elements are moistened with spirit and well triturated. This yields a preparation well suited for medicinal use. The preparation contains 13.2 per cent of free mercury, and keeps green when stored in amber-colored bottles in the dark. The prescribers whom the authors had to deal with insisted upon having a green salt, and ordered it in ½-grain doses. The pills are best made with sugar of milk, gum, and syrup. Finally the authors quoted the opinions of Drs. Buxton Brown and Campbell Williams, which were entirely in favor of the salt prepared as suggested.—After *Chem. and Drugg.*

Solution of Salicylate of Iron.

Mr. F. W. Haussman has made experiments on the best method of preparing the salicylate of iron (ferrous) in solution, and recommends the following as giving the most satisfactory results (in *Pharm. Era*), though he adds that it hardly admits of extemporaneous preparation, since some time is required for its completion. It being, however, perfectly stable, a small amount can be kept in stock in localities where a sudden demand is liable to be made.

1. *Solution of Ferrous Salicylate.*

Salicylic Acid	60 grains.
Freshly Precipitated Ferrous Carbonate	35 "
Or Saccharated Carbonate of Iron	3 drachms.
Glycerin	1 ounce.
Citrate of Potassium	½ "
Water	a sufficient quantity to make 4 ounces.

Dissolve the citrate in the glycerin, using heat, and add the salicylic acid, stirring until dissolved. Add the iron salt in small portions, stirring thoroughly after each addition, until effervescence ceases. Add the water in several portions and boil the liquid for about ten minutes.

Allow to stand about twenty-four hours, and filter.

The amount of ferrous carbonate is in excess, and on standing it is gradually deposited. The solution is of a dark-brown color, but lighter than the ferric, without odor, and a sweet taste. Reaction acid, spec. grav. 1.20.

It mixes with water, and, if supersaturated with acids, precipitates the salicylic acid without developing an intense violet color. It contains about 2½ grains of ferrous salicylate in one teaspoonful.

The solution of ferric salicylate, according to the same author, is best prepared by first obtaining the ferric salt and then dissolving this.

2. *Ferric Salicylate.*—A hot or cold aqueous solution of salicylic acid is saturated with freshly precipitated ferric hydrate, and the filtered solution set aside, when amorphous ferric salicylate will be precipitated.

This precipitation is not prevented by the addition of syrup, glycerin, or alcohol; but the precipitate is completely soluble in water of ammonia.

3. *Solution of Ferric Salicylate.*—This is best made by dissolving the ferric salt with the aid of an alkali citrate.

Ferric Salicylate	80 grains.
Citrate of Potassium	120 "
Glycerin	1 fl. oz.
Water	enough to make 4 "

Dissolve the citrate in the glycerin with the aid of heat, add the iron salt in small portions, stirring after each addition until it is dissolved, and lastly add the water gradually. Heat to boiling and filter while hot. The author himself thinks it better to double the amount of citrate of potassium if the solution is to be kept for some time.

Pyoktanin and Aniline Colors in General as Antiseptics.

Prof. Stilling, of Strassburg, has devoted special study to the aniline colors and their employment in practice, and has (as announced in previous issues) found that methyl violet possesses the highest degree of antiseptic power, and he claims that a one-tenth of 1 per cent solution of this substance could be injected under the skin of a guinea-pig to the amount of 20 C.c. or more without causing any hurt to the animal.

Half that quantity, however, if injected into the peritoneal cavity, proves fatal, the viscera, and especially the kidneys, with the exception of the Malpighian corpuscles, being colored blue. A few drops of the solution instilled into the eyes of rabbits colored the conjunctiva, but left the cornea—if this were uninjured—unaffected, the coloration disappearing the next day.

Prof. Stilling then employed this solution with marked success for the treatment of many eye and other diseases, including scrofulous ulcers of the cornea, conjunctivitis, eczema of the lids, parenchymatous keratitis, serous iritis, disseminated choroiditis, sympathetic ophthalmia, whitlow, varicose ulcers of the leg, etc. A pure form of methyl violet for surgical purposes is now manufactured under the name of pyoktanin.

These results have, however, not been universally confirmed, and Dr. Mauthner, of Vienna, has just published a statement that he has been quite unsuccessful in his trials of this substance in a number of eye cases similar to those in which Prof. Stilling has recorded such favorable results (*Lancet*, July 5th, 1890).

Dr. Carl (*Fortschr. der Med.*, 1890, No. 10) has likewise failed in obtaining satisfactory results. He experimented at first with fuchsin, gentian violet, methyl blue, and finally methyl violet for several months. He has employed the watery solution of methyl violet in the treatment of affections of the conjunctiva, and as a local application, by means of thin camel's-hair pencils, to ulcers of the cornea.

In affections of the conjunctiva he has found the methyl violet to be absolutely inert, while in infiltrated and superficial ulcers of the cornea, although methyl violet has seemed to somewhat reduce the signs of irritation, no such effects as claimed to follow its employment by Stilling were ever observed; and since he employed atropine in conjunction with the aniline colors, it is very doubtful as to what share is to be attributed to the latter. Besides he reports a case of serpiginous ulceration of the cornea where methyl violet appeared to aggravate the course of the disease. Dr. Braunschweig has likewise published results which tend to reduce the enthusiasm which might be expected to follow Stilling's work.—After *Therap. Gazette.*

[*Note.*—Several prominent practitioners of New York City, who have given these coloring matters (particularly pyoktanin) a careful trial, have arrived at very divergent results. One of them has informed us that he has observed or obtained absolutely negative results. Another objects to the strong tinctorial power of the substance, which is apt to betray itself at the most unexpected time upon the hands or clothes of the operator, in spite of the greatest care. Evidently the trial of the utility of these compounds is not ripe for a verdict yet. —Ed. Am. Drugg.]

Strophanthus Hispidus.*

SINCE their introduction as a medicine strophanthus seeds have varied considerably in quality, so that great variation must have been experienced in the therapeutic value of its preparations. The seeds first used and described by Prof. Fraser were thought to be derived from the plant described by Prof. Oliver in Hooker's "Icones Plantarum" under the name *Strophanthus Kombé*, Oliv., but which is now regarded as a "variety, a geographical race, of *S. hispidus*." The flowers of the plant which yielded these specimens have been submitted by Dr. Fraser to Prof. Oliver, who "expresses the opinion that they are the flowers of *S. hispidus*." Mr. Holmes pointed out, however, that the seeds employed by Prof. Fraser differ both in size and color from those obtained from the typical *Strophanthus hispidus* of the west coast of Africa, this opinion being based on a careful examination of specimens obtained at different times; and he wished to emphasize the fact that the seeds originally used by Prof. Fraser differ from those yielded by the typical *S. hispidus* West Africa, so that preparations made from West African seeds may differ considerably in action from those made with East African seeds. It is therefore important to note that (1) the seeds used by Prof. Fraser possess the following characters: In bulk some of the seeds appear to be of a grayish-green color, and others of a fawn color. This, however, is an optical illusion, which is readily dissipated by altering the angle and direction of the seeds to the light. The hairs on the seeds all point in one direction, and are somewhat appressed to the seed coat. If the seed be first presented towards the light so that the apex is towards the light, and then reversing the seed so that the base of the hair is presented to the light, and varying the angle of incidence, it will be seen that the fawn color appears green, and vice versa. (2) The seeds vary in quality according to the degree of ripeness of the pods and the carefulness with which they have been dried. On breaking a seed across it should exhibit a firm, white endosperm, showing under a good lens a line marking the enclosed cotyledon. All seeds that are shrunken or shrivelled, or that show a dark-colored interior, should be discarded. (3) All seeds that have not a hairy surface, and in which the hairs do not present the alternating grayish-green and fawn color, should not be employed. There has occurred in commerce a mixture of glabrous seeds with hairy seeds, and also a somewhat twisted non-hairy seed belonging to a different genus, *Kickxia Africana*. The latter are easily recognized by the different shape, and the fact that the cotyledons are seen to be doubly folded when a seed is broken transversely. These characteristics suffice to distinguish true from false seeds. Mr. Holmes proceeded to speak of the glucoside ouabain, showing how it differs from strophanthus.

In connection with this paper two leaves were sent by Mr. Thomas Christy from a plant grown by him, and which was propagated from a sample of seeds the origin of which was in doubt. Mr. Holmes wrote from Edinburgh that he had no doubt that the plant which yields true strophanthus seeds should be called *S. hispidus* var. *Kombé*, and that Arnaud's ouabain is strophanthidin, which is a body formed by splitting up strophanthin. Arnaud actually uses acetic acid in his process, and this suffices to effect the decomposition.—*Chem. and Drugg.*

Oleite, or Ricinol-Sulphonate of Sodium.

MR. W. A. H. NAYLOR contributes the following paper on this subject in the *Chem. and Drugg.*

In a paper read before the American Pharmaceutical Association last year at San Francisco on "Pharmacy as Applied to Preparations for the Skin," Mr. Fred. B. Kilmer communicated some interesting facts respecting a substance known as oleite (see this journal, 1889, 194). Chemically this substance is essentially ricinol-sulphonate of soda.

The following descriptive outline of the method of its production is furnished by Mr. Kilmer: "It is prepared from castor oil by treating with sulphuric acid at a low temperature, when a compound of sulphuric and ricinoleic acid is formed. The free sulphuric acid being removed by washing and any unchanged oil by ether, the resulting sulphoricinoleic acid is then neutralized by sodium hydrate, the finished product being a jelly-like liquid, with a little odor, acrid taste, soluble in water, alcohol, chloroform, and essential oils." This description is characterized by brevity and vagueness, while the latter part of it is unfortunately so worded as to invite, if not literally to compel, the deduction of an erroneous inference. In the absence of particular knowledge of the action of sulphuric acid upon certain oils, one would conclude that the product of the reaction between the castor oil and the acid—sulphoricinoleic acid—was not sensibly soluble in water or in ether, while as a matter of fact the reverse is the case.

My present object is simply to supply a working formula for the soda compound, one that I have used and can recommend.

Take 1 pound of castor oil, and add to it gradually, with continuous stirring, 2 ounces by weight of sulphuric acid (B. P.). This part of the process will occupy several hours, and should be timed so as to be finished towards the end of the working day.

In the morning introduce in the same manner 1 ounce by weight of the acid, or a sufficiency. The point of finality is reached when the product remains clear, or, as is generally the case, is only faintly opalescent when diluted with about 40 times its volume of distilled water.

It is convenient for me here to interpolate the remark that the application of a suitable amount of heat is favorable to the reaction. The temperature of the mixed oil and acid may be allowed to reach 110° F., and may, without detriment, even rise to 120° F. When chemical combination is complete, the product is at once intimately mixed with 1½ times its weight of distilled water, and allowed to stand until separation into two distinct portions has ensued. The supernatant and oily layer is then removed and neutralized with a 10-per-cent aqueous solution of caustic soda. This soda compound is shaken up with five times its volume of proof spirit and set aside, when any free oil will rise to the surface. The lower and spirituous portion is evaporated on a water bath to a thick jelly, the liquid being kept faintly alkaline by the addition of soda solution if necessary. The resulting product usually contains a small proportion of sulphate of soda, but the quantity is insufficient to rank as a serious objection, in view of the uses to which oleite is likely to be applied. If, however, in any case it is deemed necessary to eliminate traces of alkaline sulphate, the ricinol-sulphonate of soda must be treated with alcohol, in which the latter is soluble and the former practically insoluble.

The free acid (ricinol-sulphonic acid) may be readily obtained by decomposing the soda compound with hydrochloric acid.

Gum Picking in Trieste.

AMONG the working population of Trieste the "sessolotte," or "shovellers," form a distinct and easily recognizable class. These "sessolotte" are the girls employed in sorting and classifying gums, figs, dates, and other produce for which Trieste is an important market centre. They lift the goods out of the original packages by means of a "sessola," or small wooden scoop, and place a supply on a small wooden table made for the purpose.

The "sessolotta" holds a knife in her right hand, and with this and the fingers of the left hand she is able to sort, in an incredibly short time, the gum or other material which she is told to pick, according to size and quality. It is said that the natural gum arabic as it arrives in Trieste has to be picked twelve times in this manner before it is finally fit to be brought into commerce as finest hand-picked quality.—*Chem. and Drugg.*

Valuation of Spices.

PROFESSOR HILGER gives the following percentages as the highest for ash which he has found in commercial samples of the genuine spices:

	Ash.	Insoluble in Hydrochloric Acid.
Black Pepper	6.5 per cent.	2.0 per cent.
White Pepper	3.5 "	2.0 "
Cinnamon	5.0 "	1.0 "
Cloves	7.0 "	1.0 "
Pimento	6.0 "	1.0 "
Mace	2.5 "	0.5 "
Nutmegs	5.0 "	0.5 "
Saffron	8.0 "	0.5 "
Ginger	8.0 "	0.5 "
Caraway	8.5 "	3.0 "
Fennel	10.0 "	2. "
Cardamoms	10.0 "	2.0 "
Anise	10.0 "	2.0 "
Capsicum	5.0 "	0.5 "

—*Chem. and Drugg.*

Oil of Pennyroyal is manufactured in Southwestern Ohio to a large extent. Guernsey Co., Ohio, has produced as much as 3,000 pounds in one season; but the product is variable—last year the amount was not more than 100 pounds. It is also made in small quantities in Illinois, Virginia, North Carolina, and Missouri. The distillation of the oil is carried on in the simplest manner possible, with very crude apparatus. The yield of oil varies with the season and the condition of the herb when gathered. The largest amount and best quality is obtained from the herb gathered while in bloom and partially dried.—*Chem. and Drugg.*

"Arctic Pharmacy."—The northernmost pharmacy in the world, compared to which those in Iceland are situated in summer seas, has temporarily ceased to exist.

It was the Apotheke at Hammerfest, the Norway town on the Arctic Sea, and the fire which consumed that town recently consumed it.

* Abstract of a paper read at the recent British Pharmaceutical Conference by E. M. HOLMES, F.L.S.

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EDITORIAL.

We have devoted this number to the report of the meeting of the American Pharmaceutical Association, at Old Point Comfort, and to some of the more important papers presented, believing that it would interest our readers to have the report as nearly complete as possible in one number.

The lectures at the College of Pharmacy of the City of New York, for the session of 1890-91, will begin on Monday, October 6th, at 3.45 P. M. Extensive improvements have been made in the college building, affording more room for quiz-classes, and more than doubling the size of the library.

QUERIES & ANSWERS.

Queries for which answers are desired, must be received by the 5th of the month, and must in every case be accompanied by the name and address of the writer, for the information of the editor, but not for publication.

No. 2,480.—**Grease for Glass Stoppers, Stopcocks, etc.** (S. A.).

In selecting a grease or fat for rendering glass stoppers, etc., tight, or preventing them from becoming cemented, regard must be had to the nature of the liquid contained in the bottle or other glass vessel (burette, etc.). Under most circumstances a thin coating of petrolatum or paraffin oil will answer. This is especially useful when the bottles contain solutions of caustic alkalies, tannin, chloride of lime, etc. In the case of chloroform (which our subscriber inquires about) the above coating would be entirely inadmissible, since the chloroform would dissolve it. If the stopper of the bottle is ground carefully and fine, there is usually no need of coating the stopper at all; but if it must be done, then the best medium is glycerin, a very small amount of which may be applied to the stopper.

To render glass stopcocks perfectly tight and prevent them from becoming cemented, the same substances may be used as for glass stoppers. But many prefer for this purpose either a mixture of tallow and wax in proportions suitable to the climate or season of the year—it should have the consistence of cosmetic, and may be made of about equal parts of wax and tallow—or a mixture of 1 part of caoutchouc and 2 parts of petrolatum melted together at a temperature of about 300° F.

No. 2,481.—**Pulvis antispasmodicus** (M.D.).

There is no standard preparation to which this term applies. The formularies of various hospitals here and in Europe contain preparations which go by this name; but it would not be proper to dispense these, unless it is positively known that one or the other of these formulæ is actually intended. Your inquiry appears to refer to a prescription written by a physician in Germany. In this case it may be either Stahl's antispasmodic powder, composed of the following:

Potassium Sulphate	5 grains.
" Nitrate	5 "
Red Sulphide of Mercury	1 "

—(to be taken as one dose, in water; larger doses, in the same proportion, are also given, with caution)— or, the preparation of the Berlin Pharmacopœia Pauperum (Pharmacopœia for the Poor) may perhaps be meant, which is as follows:

Prepared Oystershell	10 parts.
Valerian Root, pd	10 "
Mistletoe Twigs, pd	5 "

(Dose, about 5 to 10 grains.)

This is particularly intended for children suffering from spasms.

No. 2,482.—**Terebene** (Baltimore).

Our correspondent complains that a supply of terebene which he has received from a wholesale dealer in drugs has proven, on administration, to be exceedingly irritating and to have developed symptoms showing that it consisted wholly, or mainly, of unaltered oil of turpentine.

This is not at all surprising to us, since we have had the same experience repeatedly. We have made it a rule never to allow an invoice of terebene to be broached for consumption, unless we have proven its optical neutrality by the polariscope. Of course, we realize the fact that this instrument is not likely to be found in many drug stores; nor can this be expected. But to those who wish to make sure about the correct quality of the terebene they dispense, we would give the advice, when ordering, to demand that the bottle or bottles be labelled "Terebene, optically inactive," and that the bill contain the same words. This would enable the purchaser to have recourse to the seller or maker, should any damage result from the administration of the article. It is well known that there are some perfectly reliable brands of terebene in the market. These are invariably labelled as above stated, or with words to the same effect, and have the manufacturer's name on each package, all of which constitutes a tolerable guarantee. Yet, as stated before, there is no absolute certainty without controlling the liquid by means of the polariscope.

No. 2,483.—**Albuminate of Mercury** (P. J.).

Solution of albuminate of mercury has been employed hypodermically, with success, in syphilis.

The strength of the solution is usually so adjusted that each cubic centimeter corresponds to 0.1 Gm. of corrosive sublimate, or 45 grains in a fluidounce. A solution of this strength may be preserved, without change, for several months, if it is kept in a dark place. For actual use it must, of course, be suitably diluted, in accordance with the physician's direction. Under no circumstances must any liquid "albuminate of mercury" be dispensed, unless the prescriber has stated the exact strength, or has given such other directions as will make it quite clear what the exact strength is intended to be.

A solution of albuminate of mercury of the strength above mentioned may be made in the following manner:

Into a filtered solution of egg albumen, which must be in excess, pour a 5-per-cent solution of corrosive sublimate. Separate the precipitate, which consists of "mercuric albuminate" (so-called), and dissolve it in a sufficient quantity of solution of common salt of the strength of 20 per cent. Finally dilute with water so that each cubic centimeter will correspond to 0.1 Gm. of mercuric chloride used. This is the formula given by Beckurts and Hirsch ("Handb. d. prakt. Pharmacie," ii., 110), who add the remark that (according to A. Schneider) the mercuric albuminate is *not dissolved* by the chloride of sodium, but is *split* by it into its component parts. Yet the resulting double salt (sodium chloride + mercuric chloride) does not precipitate the albumen accompanying it; hence the so-called solution of albuminate of mercury is really a solution of sodium chloride + mercuric chloride + albumen. The double salt contains, for every molecule of mercuric chloride, almost exactly 6 molecules of sodium chloride.

Dieterich gives the following formula:

Beat 25 Gm. of fresh white of egg, allow the beaten mass to become fluid by standing, and then add, under stirring, a solution of 5 Gm. each of mercuric chloride and sodium chloride in 80 Gm. of distilled water. Set the mixture aside during one or two days in a dark place, then filter. This solution is weaker than the former, being about 1 in 20.